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How to keep your money safe on the Internet

Web design
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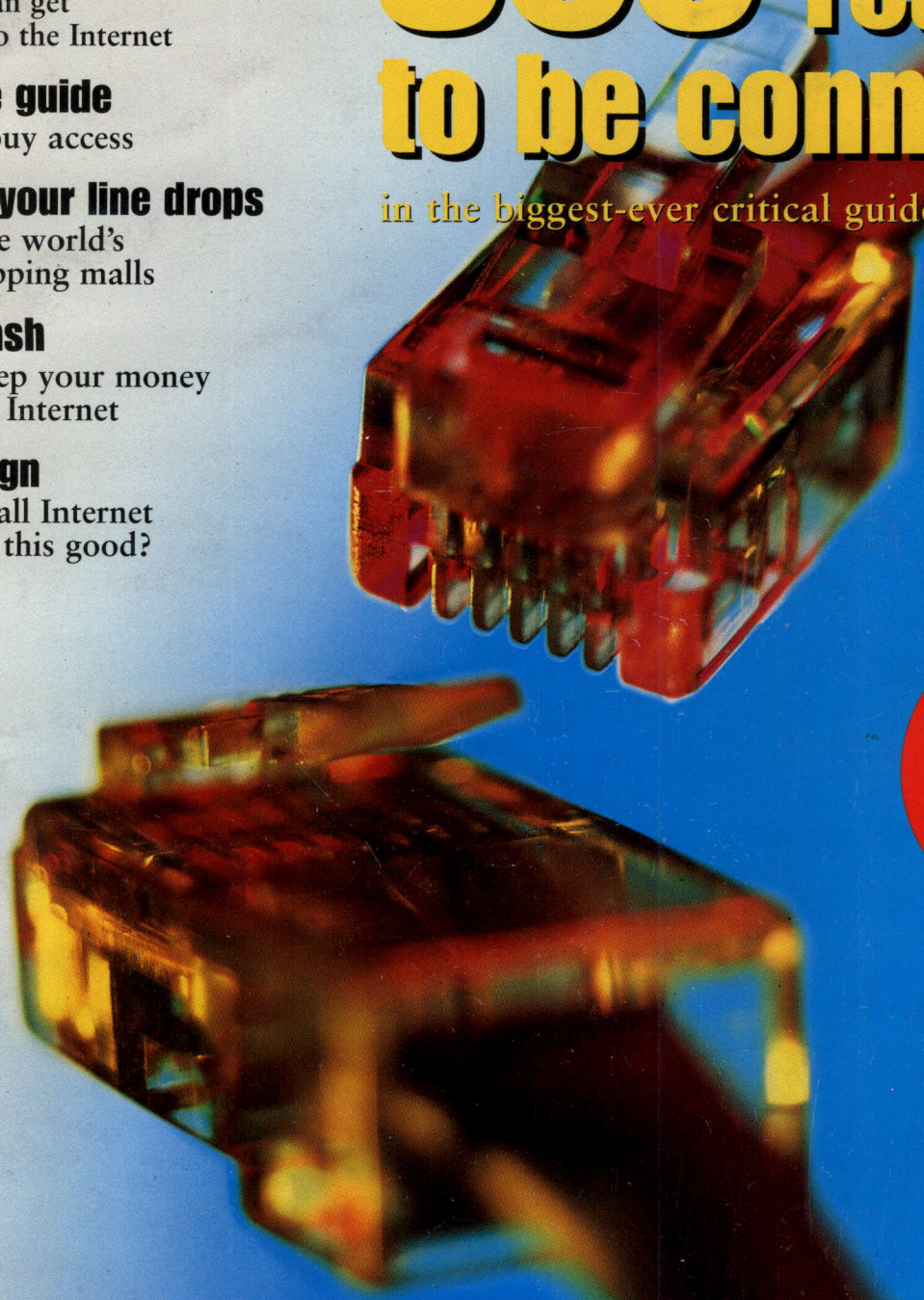

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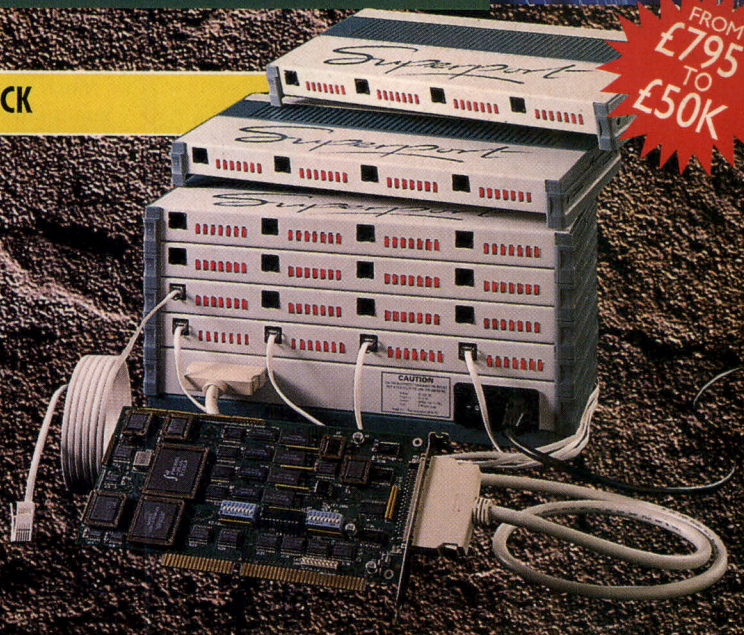

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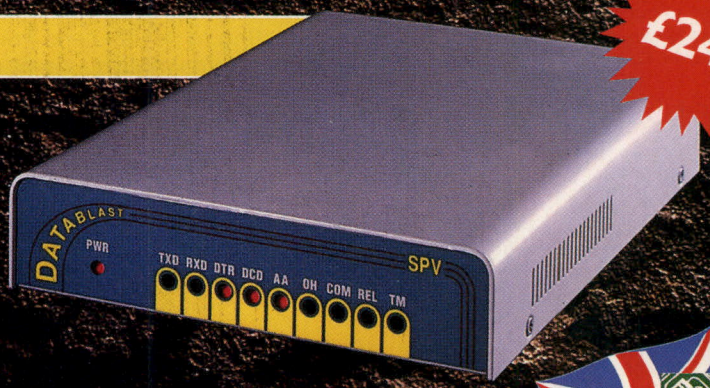

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March 1995, Issue 4

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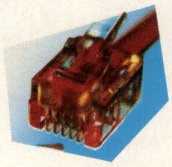
Recently, it's felt more like we're offering an Internet help desk, than producing a magazine. Much of our time is spent answering questions, giving advice and putting users and vendors in contact with each other. The most difficult step still seems to be between buying an Internet account and getting it working. Don't get me wrong, readers should see magazines as a reliable (and impartial) source of advice. We don't mind you asking (as long as it's by email, and not during press week), far from it. It gives us a warm feeling to get another newbie up and running. What this painfully highlights though, is the burgeoning need for accurate, instant and understandable information. Much of the marketing out there still seems to be concentrating on the future of global communications, rather that what you can do now, and how you do it! The point I'm trying to make is: if you want to know something, don't be afraid to ask. We've tried to incorporate as many mechanisms as possible within the magazine to elicit your feedback and opinions, so please use them. In this issue there are three pages of Messages and three pages of Frequently Asked Questions. If you think of a way we can promote your views, tell us about it. Let us know where you think the Net is going, and whether that direction is a good one.

Neil Ellul, *Editor*



53 The biggest-ever guide to internet sites

This month's **What's On** directory is now the biggest ever published in a magazine and, we think, the best, with 27 pages of addresses. You've heard of the sliced up body, **Playboy** and **PizzaNet**, now here's where you'll find them in such diverse categories as Adult, Religion and Weird!

24 How do I get connected?

Practical and easy to follow, our step-by-step guide tells you exactly how to get on to the Internet. If you want to get started staight away, turn to these pages now.

94 The complete Internet access buyer's guide

Which company has the service for you? And how much will it cost? Everything you need to know – read this before you buy.

18 Net gains

Radio 5's *The Big Byte* is using the Internet as another way of broadcasting to its listeners. Presenter **Gareth Jones** and producer **Julian Meyers** explain why it's a great medium for audience feedback. Plus news on what Friends of the Earth, Screen Finance, Price Jamieson and CartooNet are up to.

34 Exclusive interview: Leonard Kleinrock

He doesn't speak out often but when he does it's because he's got something to say. Net veteran **Leonard Kleinrock** tells **INTERNET** why he thinks the Net is in danger of collapsing.

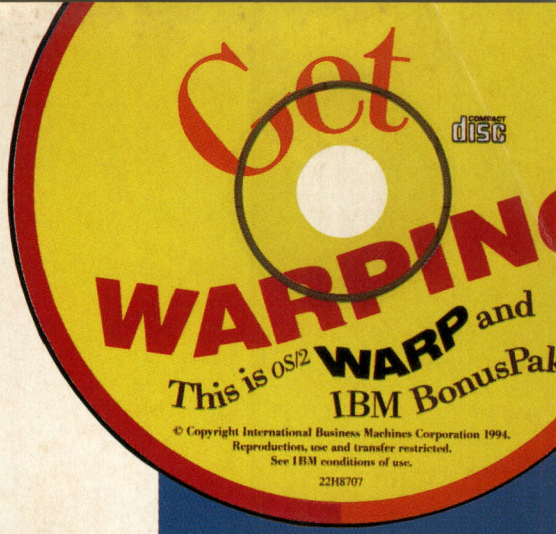
42 Shop 'til your line drops

Jim Hayes dusts off his credit card and tours the Net's best shopping malls.

32 Notes on the Net

The music business is set to make the most out of the Internet. We look backstage to see what's coming.

ents



38 Digital cash: will your money ever be safe?
Competition to find a secure way of making financial transactions is becoming intense but how reliable are the solutions currently on offer? **Paul Lavin** reports.

46 How to advertise on the Internet
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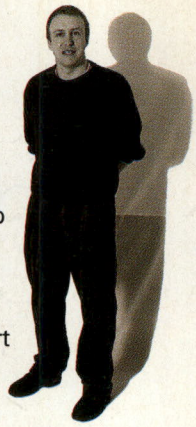

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You only get one chance to make an impression – writer and Web master **Ivan Pope** tells how, and how not, to design Web pages.

51 USA today **Daniel Dern**, US-based Net expert and now a regular **INTERNET** columnist talks about his hopes and his predictions for the coming year.

45 The Big Boys are coming
Paul Lavin discusses whether the Internet access providers should be quaking in their boots or embracing the competition with open arms.

82 Reviews Keep up-to-date with what to buy and what to steer clear of. This month we review Netmanage's **Chameleon**, Pipex' **Solo** access software, Citam's **ISDN adapter**, Purple Training's **Cyberian video** and much more.

23 Pick of the month A very personal selection from **Angus Kennedy**, **INTERNET**'s own What's On editor.

Get connected with our free demo version of IBM's OS/2 Warp! page 28

This month's cover CD is packed with IBM's latest software offering – OS/2 Warp. It gives you all the tools necessary to get connected to the Internet straight from your desktop. Turn to page 28 and start exploring the Internet for FREE. All you need is a reasonably modern computer and modem. If you haven't got a modem, turn to page 91 for details of our very special offer. No CD-Rom on the cover? Ask your newsagent. Problems installing OS/2 Warp Try and Buy, telephone the IBM Helpline on:

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Regular features

7 News GUI-based Web publishing becomes a reality, second UK Internet cafe open, and Microsoft's Windows NT Web server.

12 Events: from Cyber Sex to Soccer If you spend all your time online, **INTERNET**'s events pages will keep you up-to-date with real-world happenings, plus the gossip from Cyberia, the Internet cybercafé. And don't miss our comprehensive Diary inside the back cover, page 98.

14 Messages According to the flood of email we get in our inbox every morning, you like the magazine so far. Here's a selection of your views and news.

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98 Advertisers' index Still the world's only ad index with telephone numbers and email addresses.

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Don't just sit there – get on the Internet today. Find out What's On with our directory, page 53.

Next month in INTERNET...

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news

Silicon Graphics launches WWW stations and servers to rival Sun's

The world of ready-to-roll Internet hardware is growing fast. With the launch of Silicon Graphics' line of WebForce Indy and Indigo2 workstations and Challenge S servers, Sun Microsystems' Netra servers now have significant competitors.

The Internet-optimised SG boxes are designed to provide high bandwidth visual computing systems for use in preparing Internet publishing materials and for browsing online. They come bundled with Netscape's Navigator client software and Netsite server software.

SG claims that WebForce is the only product specifically designed for creating and serving the media-rich World Wide Web.

The Netsite server software is designed to bring RSA commercial-grade security and high performance networking to Web communications.

SG's authoring software WebMagic Author is a Hypertext Markup Language editor (HTML) which uses a graphical user interface shielding users from the Hypertext syntax.

Prices start at £9,100 for a WebForce Indy with a 133MHz MIPS R4600 RISC chip, eight-bit graphics, 1Gb hard disk, 32Mb memory and 16-inch high-resolution colour monitor. The 24-bit Indy authoring system with 1Gb disk and 32Mb memory is £14,490; the fastest workstation, at £37,430, has a 200 MHz MIPS R4400 Indigo2 Extreme with very high end graphics, 2Gb hard disk and 128Mb memory.

The SG Web server is at http://www.sgi.com

New café

Cambridge is home to the country's second cybercafé, CB1. It's a coffee shop and second hand bookstore, run by psychologist, Dr Daniel Sturdy in a joint venture with access provider CityScape. Opened in January, it has been packed ever since. Surfing costs £5 per hour and CB1 is at 32 Mill Road, Cambridge CB1, tel 01223 576306, email at sturdy@cityscape.co.uk or Web at http://www.cityscape.co.uk/cb1/

Euro beat goes on

It's now possible to sample current sounds created by emerging Indie bands via the Independent Underground Music Archive (IUMA).

Southern Studios, a London-based record company, has joined with Silicon Graphics to run IUMA Europe. However, it's not just a mirror of the US IUMA site, and features a veritable tripscape of videos, news, techno, music clips, reviews, gossip and gratuitous weirdness, with a more subversive feel than the US rock 'n' roll presence.

To listen to the samples, download the sound bites which are stored in MPEG or .au (Unix audio) formats. Macintoshes will have little difficulty playing these files using software such as Sound Machine, but PCs may need an MPEG to .WAV conversion utility in order to play them via a sound card.

For more information contact Jon Bains, at convulse@southern.com. **IUMA Europe is at** http://iuma.southern.com

The much anticipated **Microsoft Network** will not be available until Windows 95 ships in August. It is likely to be launched as an X.25 service with TCP/IP connections to the Internet added by year end. UUNet will build a dedicated TCP/IP network allowing Microsoft subscribers ISDN access at speeds up to V.34.

Mastercard intends to connect its private network to the Internet by mid-1995, enabling online authorisation through Netscape's data encryption software. In a similar deal, the Bank of America will allow its merchant customers to accept all major credit cards and offer them for authorisation, so long as they do so through Netscape software. The full nature of Visa's association with Microsoft is unclear.

Downing St has announced that the Prime Minister's residence will test an Internet connection with a WWW service allowing voters to email the PM directly. The House of Commons presently has an internal email system but only around 100 MPs use the network and it is not connected to the Internet.

IBM's NetSP Secured Network Gateway, software which protects networks from Internet intruders, won overall most innovative product and best new network management product in the Comnet New Product Achievement awards. The software runs on an IBM RISC System/6000 workstation and acts as a customisable gateway for electronic traffic flowing between a corporate network and the Internet. It beat almost 100 other entrants.

Microsoft, IBM, Sun, Bay Networks and **BBN** will fund an Internet-based project to encourage commerce between the US and India. The India/US Technology Gateway will open an international link to Indian business associations.

The Software Publishers Association has hired a full-time digital detective to conduct investigations into software piracy on the Internet. Although bootlegging is still costing the industry several billion pounds per year world-wide, reports of corporate piracy fell by 23% last year.

Australia's main telecommunications carrier, **Telecom**, is expected to take over AARNet, the Australian backbone of the Internet, which is presently owned by a consortium of universities.

America Online is suffering growing pains in processing its 1.5 million pieces of mail each day. Inbound email from the Internet is often delayed by several hours during peak evening traffic. AOL hope that its planned system changes will reduce this problem.

Sprint Corp has expanded its international Internet service to Korea through agreements with Korea Telecom, Dacom Corp and the Korea Institute of Science and Technology.

The **46th Bath International Music Festival's** programme is now available on the Web for the first time. The service lists over 80 classical, contemporary and jazz concerts, talks, walks, exhibitions and events to be held at venues in the Bath area from May 19 to June 4. Web: http:/www.demon.co.uk/r-cube/bathfest/

The Global learning and Observations to Benefit the Environment (GLOBE) programme, jointly run and funded by six US federal agencies, is about to initiate a hands-on, research project in which 1500 US schools will contribute atmospheric, biospheric and hydrospheric data over the Internet as part of a global model. Over 100 other countries have also expressed interest in joining the project.

GIF users could face fees from Unisys

Unisys has decided to enforce its patent on image data compression and conflicting stories are circulating in the Internet community, some suggesting that end-users and handlers of Compuserve's GIF images will be liable for royalties. CompuServe denies this but has agreed that its developers should pay to use the technology.

CompuServe's Graphics Interchange Format (GIF) incorporates Unisys' patented Lempel-Ziv-Welch (LZW) algorithm for data compression. After protracted negotiations which started back in January 1993, CompuServe agreed to a one-off payment of $125,000 plus $5,000 per month. CompuServe developers will have to contribute a $1.00 licensing fee and a royalty of 1.5% or $0.15, whichever is greater, per registered copy of any program using LZW technology. According to CompuServe this agreement will be transparent to end-users, resulting in the free transferral and viewing of GIF images across the Internet.

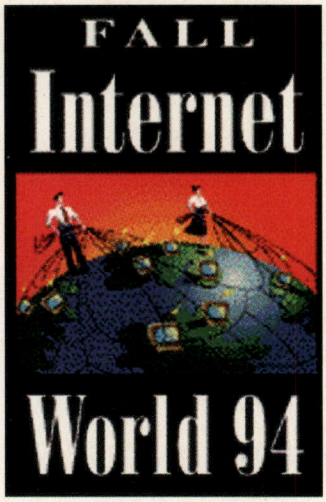
However, at the same time CompuServe intends to develop a new standard capable of 24-bit lossless compression, to be made available free. It is soliciting input on the standard at gif24@csi.compuserve.com.

Developers outside the CompuServe camp will need to pay Unisys direct, although in some cases an existing agreement may provide exemption. For example, the licence is already built into the V.42 bis modem standard, which uses a version of LZW modified by Dr Alan Clarke while at BT, and was not accepted as a data compression standard until previous patent issues were resolved.

As an alternative, Telegrafix, has a LZW-free version of GIF called GEF (Graphics Exchange Format). However, GIF has become somewhat of a de facto standard throughout the WWW.

This story has a precursor in the bulletin board world. The Arc format was widely used as a means of compressing files until copyright was claimed for it, at which point the bulletin boards swiftly converted to the rival Zip format.

Net surfers may well defect en masse from GIF to JPEG since the latter is generally perceived as technically superior. If you think you may be affected, you should check CompuServe's home page at http://www.compuserve.com.



Internet World report

Last December's Internet World trade show in Washington DC attracted 11,000 attendees, and 115 exhibitors, three times the expected number and an Internet trade show record.

IBM led the exhibitors, announcing that its Global Networking division, Consulting Group and Integrated Systems Solution Corporation (ISSC) intend to provide a simple solution to World Wide Web (WWW) server design and multimedia integration. IBM's Global Network intends to launch its content hosting services, on 1 April, to provide a billboard for businesses to post their details. The results of an international survey of over 1400 IT managers and IBM users found that Internet access was at the top of their wish list for 1995. IBM users are looking for guidance not only on how to access the Internet, but how to use it as a means of doing business. To this end, IBM has introduced Warp, an incarnation of its OS/2 operating system, which integrates Net services.

Another announcement came from California-based Internetware, with IWare, a user-friendly Internet solution for NetWare lans. It uses Novell's current server TCP/IP, included in NetWare 3.x and 4.x. IWare consists of a line of NetWare Loadable Modules (NLMs), installable on NetWare servers to provide firewall security.

Verity Inc's Topic Information Server was introduced as the first complete Internet publishing product. It will include authentication and security technology from Terisa Systems, which has been incorporated into Spyglass Inc's Enhanced NCSA Mosaic software. Also included are Interleaf Inc's Cyberleaf application for converting Interleaf, Frame, Microsoft Word and WordPerfect documents to HyperText Markup Language (HTML), and Adobe Acrobat Support, which enables live indexing of Portable Document Formatted (PDF) documents. Verity's built in Information Agents can trawl the Web to search for information. The search parameters can be entered in plain text or in its structured query language.

Popular seminars included Privacy in Cyberspace, Internet Ethics, and Electronic Commerce.

Barclaycard "staggered" by Netlink response

Within weeks of becoming the first UK credit card company to open an Internet service, Barclaycard has been "staggered" by the demand from users. It has received over 15,000 accesses, the demographics of which appear to have overturned the traditional image of the typical Net surfer.

Launched in January, Barclaycard Netlink is an interactive magazine, providing information on Barclaycard services. Over 70 of the 15,000 enquiries and accesses have been to request a Barclaycard application form.

The Talkback email service has also been popular, enabling users to get account details and redeem Barclaycard Profile points (credits earned for card usage that can be exchanged for gifts).

"The overwhelming majority of users of Barclaycard Netlink services have been men – some 98%," said Roger Alexander, managing director of Barclaycard's Emerging Markets Unit. "Unlike the popular image of a Net user as being a young student, many who have contacted Barclaycard are professional people, including doctors and lawyers.

"Around half are existing Barclaycard customers and most had heard of the service after seeing press coverage of its launch."

Alexander admits that Barclaycard has been taken aback by the volume and swiftness of response. He said, "We seem to have tapped a pent-up demand. From a business point of view, the almost 50/50 split between Barclaycard customers and non-customers contacting us suggests that the Net will be an important addition to our existing services – as well as a new recruitment channel."

Barclaycard is at http://www.barclaycard.co.uk

Edu service

The Internet was the centre of attention at BETT, the recent IT in education exhibition.

Research Machines launched Internet for Learning, a full Internet service specifically for schools. What distinguishes it is the filtering option, enabling access only to the educational material students need. Another feature is a pre-determined cut-off facility which will allow users to budget their phone expenses. The set-up cost for Internet for Learning is £25 with an on-going cost of £10 per month. There is presently only one POP, in Abingdon. Further info from RM on 01235 826000 or http://www.rmplc.co.uk

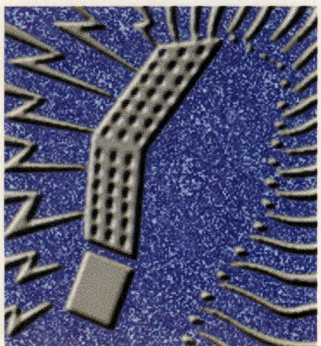
Round the clock radio from WXYC

The North Carolina student-run radio station WXYC has made history by becoming the first real-time 24-hour music broadcaster on the Internet. It can be received anywhere in the world provided you have a fast Internet connection, either a Macintosh or a Unix terminal, the right software and a sound card. Macs can use the shareware Maven or the audio channel of Cornell's CU-SeeMe, while Unix terminals need a copy of Vat. Unfortunately nothing is available for PCs yet.

WXYC's Internet presence is the brainchild of David McConville of the at the University of North Carolina SunSite. He has connected a receiver to a Mac Quadra 840AV with CU-SeeMe to digitise the signal, which is then sent using Intel DVI 32 Kbps encoding to a Sun SparcServer 1000, running the CU-SeeMe reflector software, and connected to the Net via a T1 line.

At least 40 people per day tune in from as far afield as Australia, Sweden and Alaska; for some it is the only radio they can receive. However, at the present bandwidth, the station can only support a maximum or 20-30 users at a time.

More information about WXYC at http://sunsite.unc.edu/wxyc/



Notes for publishers

To keep up with its rivals, Lotus Development has announced its own range of Internet-compatible programs. First off will be InterNotes Web Publisher along with InterNotes News.

The former enables companies storing corporate data on a Notes file server to convert that information into WWW-style pages. Web Publisher also allows links between pages to be managed efficiently. InterNotes News is designed to enable specific Usenet newsgroups to be published to those connected on a lan. They can be held on the company's central Notes database.

Lotus also promises that the GUI to the next version of Notes (4.0) will be WWW-compatible. The InterNote products are due in the second quarter of 1995 and will cost £1,895 for News and $5,695 for Publisher. More information at http://www.lotus.com

Sun and IBM have both made proposals for Internet Protocol (IP) level encryption to the Internet Engineering Task Force (IETF) security working group. They are building enhancements to their firewall products that include encryption technologies. The major specifications being considered are authentication and encryption to the IP, as well as digital signatures in the Domain Name Server.

A New Berlin company has donated **a year's free Internet connection** to the Milwaukee public library system, which will enable public access from any of the city's libraries.

The US Energy Information Administration has made its short term energy outlook data available on the Internet at http://apollo.osti.gov/html/eia/eiahome.html

Prodigy received over 10,000 sign-ups a day in response to it's full-page ads in the NY Times and Wall Street Journal offering WWW access.

Lighthouse Productions, Internet provider and owner of the Netcenter online trade show, plans to produce a cable TV show, the Internet Marathon, for distribution to about 25 million US homes. The programme will be similar to the shopping channel except that it will focus on companies marketing their products on the Internet, via the Netcenter.

The burger chain **McDonalds** has finally given up on its attempts to sue Joshua Quittner who registered the name Mcdonalds.com with the Internet Network Information Center in Virginia. In a selfless gesture, Quittner, a *Time* magazine journalist, has agreed to relinquish the name providing Ronald & Co contribute $3500 to help a Brooklyn school get an Internet connection fast enough to run full motion video.

Information about **electronic commerce and electronic data interchange** (EDI) is available at the Data Interchange Standards Association's home page at http://www.disa.org or gopher://gopher.disa.org

The Computer Emergency Response Team claims two possible traces of hackers are untyped characters appearing on the screen and a non-responding blank screen. The advisory service urges system operators to report such activity and to pay attention to lengthy connections. Further information is available by FTP to info.cert.org or by email to cert@cert.org

Bell Canada is planning to set up nationwide local Internet access for over a million users by the end of 1995.

Oracle Corp will offer its products over the Internet as part of a new distribution strategy. Fully featured software is available for download on a 90-day free trial basis at http://www.oracle.com/

The Net Investor is offering a discount brokerage service including portfolio management, stock and mutual fund trading as well as company research via the Internet at http://pawws.secapl.com

In a bid to attract foreign investment, **Fuji Bank** will become Japan's first bank on the Internet by posting its business indicators and product information on the Web. Sanwa, Sumitomo and Sakura Banks are likely to follow. Two Canadian banks, the Royal Bank and the Bank of Montreal, have also recently set up Web sites.

INTERNET's news briefs are produced with the assistance of Individual Software's First! email service. For a free trial, contact Ted Howard-Jones at thj@individual.com or tel 0491 579600

individual
SPREADING THE POWER OF KNOWLEDGE

Microsoft launches Web server

Microsoft has launched a World Wide Web server to run under Windows NT, discarding the need for users to purchase a dedicated Unix system for publishing on the Internet.

Microsoft claims the new product, known as WWW Server for NT, is so simple it can be installed in five minutes.

The software has been developed for Microsoft by Edinburgh based EMWAC – the European Microsoft Windows NT Academic Centre. While the standard edition of the WWW Server will be made available as shareware for the academic community, professional versions are being developed for commercial applications by Unipalm and Process Software. Both professional versions will include additional features such as data security to enable the server to operate in a truly commercial environment.

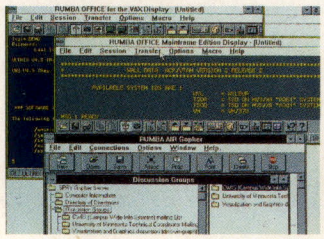
Unipalm will be marketing a customised version of EMWAC's WWW Server for NT as part of its Web-in-a-Box solution. This latter product is based around PC hardware from Digital which can be fitted with the former's 150 MHz Alpha processor. Sold by Hamilton Rentals, prices for an Alpha-based hardware platform start at £9930. This compares to £4855 for an 80486-based entry level machine.

Microsoft is able to provide speedy connection to the Net chiefly because TCP/IP protocols are an integral part of the Windows NT version 3.5 operating system software. The company claims that WWW Server for NT is therefore a low cost alternative to a Unix-based solution.

In an effort to set standards on the Internet, Microsoft will soon be releasing an Internet add-on for its Word 6.0 for Windows wordprocessor. Known as the Microsoft Internet Assistant for Word, this add-on will enable the user to automatically generate pages using the HTML (HyperText Markup Language) format used to create WWW pages. The ability to view Web pages via a simple comms facility will also be built into Assistant.

The Microsoft Internet Assistant for Word will be available under the What's New section on Microsoft's Web server at http//www.microsoft.com/pages/misc/wwwgreet.htm. More information on Process' Web Server from bourke@process.com. Further details of the Web-in-a-box package from davidb@unipalm.co.uk. The site for WWW server for NT is www.emwac.ed.ac.uk

Wall data adds Net links to PC-host connectivity



Terminal emulation company Wall Data has added Internet access features to its Rumba Windows PC-to-host connectivity product, Rumba for the Internet.

Built-in applications include a full suite of Net navigation tools, including Mosiac and email, and a Microsoft Windows Virtual Device Driver TCP/IP Multinet stack from TGV.

A suite of TCP/IP-based access applications include Rumba File Manager, line printer redirector, a line printer daemon and a Point-to-Point protocol dialler. Access is delivered via a transport agreement with Compuserve.

The single-user license fee for Rumba for the Internet is £120. The single-user licence fee to add the feature to existing Rumba is £80. Walldata's Web site is at http://www.walldata.com

BBC hosts interactive Internet evening session

On 26 March from 7pm to 10pm, 1FM's Evening Session show will feature an interactive component courtesy of the Internet. Alas it's not a CU-SeeMe session, so if you're intending to listen, you'll have to have your radio by your side.

The show will examine how music, TV, books, movies, games and information are being transformed by digital technology and will be hosted by Jo Whiley and Steve Lamacq. Bands such as Massive Attack, Pop Will Eat Itself, the Beastie Boys, Orbital, Underworld and REM will reminisce about surfing experiences.

The show will start by disussing how to get an Internet connection, music, film, home entertainment and the digital underground. It will then join up with Cyberia for a live DJ session mixing samples posted and chosen by listeners. The night will climax with a popular band playing live down an ISDN line from its own studio.

Steve and Jo will take email throughout the night and give listeners the chance to interview a prominent pop star. There will also be games to play, prizes to win and exclusive music available only on the night.

More information can be obtained at http://www.bbcnc.org.uk/bbctv/radio1/radiointeract/index.html

In the aftermath of the Kobe earthquake, Japanese expats used the Internet to obtain information on the whereabouts of friends and family affected by the damage. They were able to link to neighbouring areas which survived the 6.9 Richter scale disaster.

Pipex results show healthy growth, despite some seasonal loss

Pipex has reported its half-yearly results, as part of the group results for parent company Unipalm. They reveal that although it is making a loss of some £462,000, the subsidiary has continued to consolidate its leading role as an Internet provider, and is playing an increasing role in shaping the corporate focus of Unipalm as a whole.

Pipex' turnover came in at £1.28million, up 47% on the previous six months and 116% on the previous year. The number of Pipex corporate subscribers rose from 225 in April 1994 to 351 at the end of October 1994. This has since grown to over 400, Pipex says.

Highlights of Pipex' annual achievements include new blue-chip contracts with HM Treasury (which used the Internet to publish last November's Budget Statement, Barclaycard (see story on page 9), Nat West Bank and corporate consultants Price Waterhouse. The year also saw the launch of Pipex International, providing commercial Internet services beyond the UK.

Pipex claims to have been enjoying an order intake of around £100,000-worth of new annual subscription business per month, at the time of its flotation in April 1994. The company is well advanced for meeting its flotation target of an order intake of at least £600,000 per month, which requires a growth rate of 10-12% month-on-month.

The losses of £462,000 represent "the application of funds raised during the flotation in expanding the Pipex operation," said Pipex' managing director Peter Dawes.

Security break-ins

An unknown number of hackers have organised themselves into the Internet Liberation Front (ILF). Their online terrorism has so far closed down Pipeline servers for six hours, attacked the GEnie online service and letter bombed the US *Wired* magazine.

Pipeline network managers eventually deflected the attack and caught the intruders, who left a note claiming responsibility and attacking AT&T, MCI and SprintNet for commercialising the Internet into "a cesspool of greed".

The actions of the Internet Liberation Front will serve to further tighten security and make the Internet more closed and proprietary, an action many users are already saying they endorse.

Internet 2000: cyberlove to soccer

INTERNET has joined forces with London's Cyberia cybercafé to organise a wide-ranging programme of informal events, highlighting the use of the Internet in a range of different areas, and considering some of the major issues in the development of the medium.

The initiative, called Internet 2000, started with the UK's first Internet Art Festival (held on 19 February). Topics to be covered by other events range from cyberlove to soccer, and from music to poetry.

Eva Pascoe (europa@easynet.co.uk), **one of Cyberia's four co-founders explained, "Our aims are to encourage the innovative use of the Internet; to promote high-quality visual standards on the Web; to raise awareness of Internet applications; and to strive for open access to online information for all."**

Roger Green (rogerg@computing.emap.co.uk), **publisher of INTERNET added, "As the UK's leading general-interest Internet publication, we see it as our role to explore all aspects of the development of the medium in business, education, entertainment and human relationships. A key part of our mission is to broaden the wider world's interest in the Internet."**

He added, "The Cyberia/INTERNET partnership in Internet 2000 is not intended in any way to be exclusive, and we welcome the involvement of anyone with something to bring to the party."

Most Internet 2000 events will be informal evening meetings in Cyberia, 39 Whitfield Street, London W1. There will be featured guest speakers, but the accent will be very much on interaction and discussion. After all, the recent development of the Internet has been too rapid for there to be many actual 'experts'. As far as possible, the sessions will use interactive hook-ups with other physical and virtual locations.

Many of the sessions will be open to all but some will be invitation-only, with entrance restricted to professionals from the sector under scrutiny.

The invitation-only Internet Advertising Festival Inaugural Meeting (9 March) will discuss the organisation, later in the year, of the world's first Internet Advertising Festival. Its purpose is to identify the criteria for creative excellence in the online advertising world, as well as to establish what is acceptable to the growing Internet community.The festival will include practical workshops and discussions as well as honouring creative excellence.

If you would like to be involved in working with Cyberia and INTERNET to set up the festival, contact Sally Matrick (sally@easynet.co.uk)

CHATTER

Pipex has issued a press statement claiming that its TCP/IP package, Pipex Solo, was only a beta version and that the product was never officially launched. Could this be the same Solo that computer mag *PC Answers* carried as a cover disk? A package that was so buggy the magazine had to dedicate a two page spread to such **fix-it classics** as "having to reboot each time after use". The trial input was used to recreate the product which has now been relaunched as Pipex Dial. Pipex claims the name change was necessary because of copyright conflicts in the US.

Oprah Winfrey and her ilk will no doubt be delighted to swoop on allegations that not only is the Net the domain of geeks, hackers, presidents of economic superpowers, pop stars and online toilets, but also the lurking ground of the paedophile. The **test case** will be one in which a 51-year-old Usenetter from Seattle is being charged with rape after sending sexually explicit photographs to a 14-year-old girl and enticing her to meet him offline. It's a serious subject, but let's hope the inevitable hysteria will not tarnish the Net's image unduly.

What do you do when your whole kit and caboodle goes down and your service provider won't answer its 24-hour service line at 8pm on a Monday? Well, if you're anything like one of our readers, and you just happen to live round corner, **you drop round** in person to see what's happening. However, like him you might just find the ship abandoned. It seems this provider's poor service is losing it customers as quick as its finding them.

Looking for some new and interesting home pages? Try the selection of Cityscape clients at http://www.gold.net/users/, although don't look to **Mrs Silk** for safe fashion tips.

Events

EXHIBITIONS

The Windows Show

You'll find INTERNET on stand 170 in a special area to the left of the hall, not far from the entrance. We'll be making a very special magazine subscription and modem offer and selling a selection of the latest Internet books. Experts from CityScape will also be on hand to show off the capabilities of the Internet and to answer questions. See you there!

Details: *The Windows Show runs from 28 February to 3 March at Olympia, London. For details contact Simon Rogers at IT Events. Tel: 01256 381456 or email* 100025.3366@compuserve.com

Workgroup Computing 95

This is the annual exhibition and conference all about groupware – the tools used by large corporates to allow teams of people to work together better. This year's show features the first edition of the Internet Show, brought to you by **INTERNET** magazine, so make sure you visit the special demonstration and exhibition area designed to show the Internet in action.

Exhibitors at Workgroup Computing include IBM, Integralis, Lotus, Microsoft, and Oracle, all of whom have recently taken major initiatives on the Internet.

Details: *Workgroup Computing 95 takes place from 22 to 24 March at the Ramada Hotel, Heathrow. For details contact EMAP Computing. Tel: 0171 388 2430 or email* workgroup@computing.emap.co.uk.

Internet World International

The initial line-up of exhibitors has been announced for this, the third year of the Internet World International Exhibition, and they include Allied Telesis, BBC Networking Club, Blackwells, CityScape, Computer Manuals, Demon Internet, Domino Design, Electric Mail, Ethix, Eunet, Leaf Distribution, Integralis, International Thomson Publishing, Internet Sampling, NetManage, Matrix Publishing Network, MecklerMedia, Paragon Press, Pipex, Simon & Schuster, SoftQuad and, of course, **INTERNET**.

The show's conference is being chaired by Steve Bowbrick of Web Media and the key themes of the conference will include publishing, advertising and electronic payment systems.

Details: *Internet World is on from 16 to 18 May at the Wembley Conference & Exhibition Centre, London. For details contact Michael Hislop at Learned Information (Europe). Tel: 01865 730275 or email* michael_hislop@learned.co.uk

JOURNALISM AND THE INTERNET

NetMedia 95

Plans have been announced for a major one-day conference in London all about the Internet's impact on journalism. The event, organised in association with **INTERNET**, is NetMedia 95, the brainchild of Tony Wallace (m.s.wallace@city.ac.uk) of the Department of Journalism at London's City University.

He said, "The Internet is a new form of mass communication. The implication for traditional media (press, TV, radio) is not merely that it is growing at a phenomenal rate, but that it has overturned a critical relationship in mass communication. Guttenberg, Marconi and John Logie Baird made it possible for the few who owned or operated a printing press, radio or TV station to communicate with the many. Now the Internet has turned every owner of a £1000 computer and a modem into a publisher and broadcaster.

"The Internet will empower our readers/audiences to become their own reporters, editors and publishers. Moreover, Net surfers can receive or transmit information anywhere in the world, faster and cheaper – than any existing mass medium."

Speakers lined up so far include Steve Yelvington, online editor, *Minneapolis Star-Tribune*, Michael Strangelove, publisher of the *Internet Business Journal*, Randy Reddick, former Associated Press correspondent, now at Texas Tech University, and Alastair Kelman, EC copyright lawyer.

Details: *NetMedia 95 happens on15 June at City University, London. For details, contact Tony Wallace at City University. Tel: 0171 477 8233 or email* m.s.wallace@city.ac.uk

The Internet Show – a special new feature at Workgroup Computing 95

BUSINESS ON THE INTERNET

The Internet Means Business

ICM is running a major two-day conference for financial, business development and IT directors of organisations involved in publishing, print and broadcast media, finance, communications and retail. The event's sessions are designed to help delegates see how the Internet could benefit their businesses.

The conference sessions will include:

- Selecting an Internet provider for your business
- Effecting transactions on the superhighway
- Commercial and legal issues of doing business on the Internet
- Medical training and remote operations using the Internet
- Co-writing reports using the Internet
- Encryption and piracy
- Marketing, advertising and merchandising on the Internet
- Branding and product differentiation
- The UK political dimension: will Britain choose to keep pace with the rest of the world ?

The line-up of speakers so far includes: David Birch, director of business development at Hyperion; Mark Hugo, head of sales and marketing, Pipex; Chris Ray, IT operations manager of *Loot;* Geoff Ace, global network director, IBM; Mark Sherwood-Edwards, a barrister at Simon Olswang & Co; Peter Buck, consultant at Hyperion; Ian Watson, information services manager, Caledonian

Newspapers; Sami Shimi, consultant surgeon and senior lecturer in surgery at Ninewells Hospital and Medical School, Dundee; Paul Vizza, president, Electronic Newsstand; and Anne Campbell MP.

Details: *The Internet Means Business takes place from 13 to 14 March at the Park Lane Hotel, London. Contact Paula Munsie at ICM Marketing. Tel: 01483 37107.*

Electronic Messaging for IT

Unicom is staging a major two-day seminar on Electronic Messaging for IT, endorsed by the European Electronic Messaging Association (EEMA) and sponsored by **INTERNET**. The programme examines the impact of electronic messaging on global communications and its potential impact on the performance and profitability of every company.

The main sessions focus on practical, business-related issues, including: a review of world-wide messaging systems; the technology and cultural aspects of mobile and remote working; electronic messaging and EDI; standards for information security; and electronic trading issues.

Speakers include: Mark Hassall, Microsoft; Gavin Lennox, Lotus; David Birch, Hyperion Systems; Peter Gardner, ICL; Mark Harrison, Royal Mail; Dick Bullen, Barclays Bank Global Payments; Carol Thorp, Empire Stores; John Jenkins, International Network Services; Andrew Hinchley, Communications Planning; John Meech, University of West England; and Michael Debenham, Michael Debenham Associates.

Details: *Electronic Messaging for IT takes place from 28 and 29 March at the Cumberland Hotel, London. For further information contact Seamus Flanagan at Unicom. Tel: 01895 256484 or email* seamus@unicom.demon.co.uk

Networking and Telecomms Convergence

Unicom Seminars has a strong Internet theme running through its forthcoming Networking and Telecommunications Convergence series of seminars and workshops, which are being held at the end of February (see the Diary on page 98 for dates).

The seminar titles for the Unicom events are:

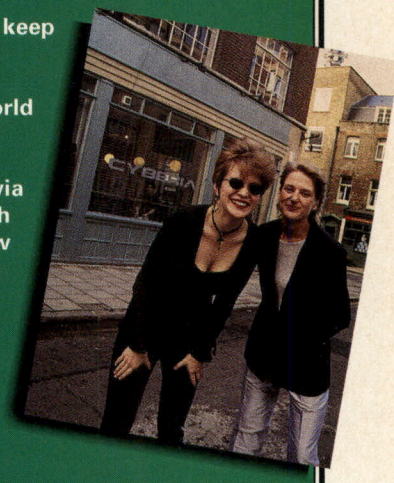
- Trawling the Internet: Commercial Impact and Opportunities
- Get Your Hands on the Internet
- Publishing for Profit on the Internet
- Shopping in Cyberspace
- Virtual Private Networks

For a complete day-by-day listing of forthcoming Internet-related events, check out the INTERNET diary, which you'll find on page 98.

ANYTHING LEGAL CONSIDERED – AND WE MEAN IT!

INTERNET is here to help you get the most out of the Internet, whether it's for business, entertainment or education. We want more and more people to use the Internet and to that end we're prepared to work with anyone, at any time, in any place, on events that promote wider use of the Net. Get INTERNET involved by contacting Roger Green, publisher, at rogerg@computing.emap.co.uk. **At the very least, we'll help publicise your initiative. Remember, the earlier we get involved, the more we can help.**

Scene at Cyberia



this month... things just keep getting wilder and wilder at Cyberia, the UK's first cybercafé. In yet another world premier, **Cyberfoo**, the first international Internet New Year's Eve bash, linked live via a CU-SeeMe connection with cybergroovers in Tokyo, New York and San Francisco. The night was, by all accounts, an unqualified success, although Cyberia's Eva Pascoe (on the left in the picture) recalls watching in virtual horror from San Francisco as Net funsters trashed her furniture.

U2 bassist Adam Clayton recently popped in to pick up his fan mail (checkout alt.fan.u2) and was chuffed to find the devoted debating how many U2 gigs he's been absent from. He was so impressed by the virtual fame that he immediately joined. You can now email the band at propaganda@u2.easynet.co.uk. Expect a Web page soon and maybe even a dedicated server.

Other celebrities spotted include music entrepreneur **Malcolm Maclaren** accompanied by a brood of chic Japanese art journalists. All-thumbs Malcolm revealed his computer prowess with the question "What's Windows?" Baffled, but recognising the potential, he left with all thumbs up, intending to put his pointy heads on to the task. Privately tutored **Peter Cunnah** from D:Ream, Factory Records' **Tony Wilson**, guitar legend **Steve Hillage** and Tamla Motown's main man, **Berry Gordy,** have also all been found guilty of surfing under the influence of Cyberia's mean coffee.

How do you deal with cyber-rejection or spatial attraction? The special **Cyberlove** event, at 7pm on 2 March, will see virtual love experts sharing their cyberomantic experiences. Discussion will be led by clinical psychologist, Dr Oliver Davidson. And at 7pm on 23 March, educational psychologist Dr Arnie Blackburn will help you answer the question 'Are computers bad for your kids?'

With a Cyberian traffic flow that has grown from less than 40 per day to nearly 200, it's not surprising that new cafés are about to appear. Keep an eye out in Kingston, Cambridge and Edinburgh for new coffee shops. Cyberia estimates that almost one in three visitors subsequently open an Internet account.

Yours, **The Cyber Snooper**

Cyberia offers public Internet access, with help if needed, at 39 Whitfield Street, London W1P 5RE, for a mere £2.50 per half hour. Thrice-weekly training sessions are £25 for two and a half hours. There's a women-only session every Wednesday. Tel: 0171 209 0982 or email keith@easynet.co.uk

@Messages

Don't just tell us how good the magazine is, let us know what you'd like to see in it. We also want to hear how you think the Internet should develop. Send to letters@computing.emap.co.uk

Congratulations on the magazine. I expect there are hordes of Internet-literate folk who will tell you they knew all that, but there are many more of us who are desperately feeling our way through the jungle and who need your new magazine and the knowledge which it will bring.

Please try to keep the ignorant in mind as well as the experts in your future issues and, who knows, I might even learn what a router is.

Iain Tolmie, UK
100440.2530@compuserve.com

Neil Ellul replies: *We try to keep the technical jargon to a minimum but do pick us up if we fail to explain something properly. Incidentally, a router is a clever little device which determines the path of traffic flow on a network. In other words, it works out where information should go, and by which route.*

Having subscribed to your magazine since the first issue, I like your style as the case studies, in particular, are quite useful for people who haven't joined the Internet yet.

I have read a few Internet magazines, but none of them seem to explain how to become an Internet access provider and what equipment is needed to do this.

Even worse, there are few mentions of education and research. Business, education and research are the most important elements on the Internet, but it seems to me that few books and magazines are putting effort into reporting on these subjects. Since there are so many universities on the Internet, I think readers would be interested in these topics.

Lee Jeng Shi, University of Humberside, UK
jengshi@odyssey.demon.co.uk

Neil Ellul replies: *In next month's magazine we will have a feature entitled How To Become an Access Provider. It should tell you everything you need to know. And no, we haven't forgotten the education sector – watch out for articles specifically covering this subject.*

Reading the article in the January issue of INTERNET about the Steve Fleming incident over alleged BT phone number hacking, I totally agree with your final comments.

I followed this in the press with great interest as it was yet another example of the Net being blamed for data crimes. It may seem paranoid but perhaps it was an attempt to scare people into believing the Internet is an uncontrolled cybervandals' dream world in the hope that it would give an excuse to introduce limitations on its use.

Perhaps it is the perception of freedom that the Internet offers, as well as the mass of information available, that attracts more users. Where else is everyone truly equal in race, religion, sex, disability etc? Where else can you find people sharing as much information, ideas, views etc as on the Net?

Everyone has a duty to protect the Net and the freedom it offers (including not abusing it). All good things don't have to come to an end. SNiP :)

Simon Park, UK
spark@pavilion.co.uk

I'm very happy with INTERNET, although I'm slightly surprised by the lack of modem adverts - I guess the advertisers come along later.

I have a gripe, however. I subscribed after issue 2 and yesterday saw issue 3 available in Cyberia. I wondered what had happened to my subscription copy and, as I couldn't wait, bought a copy. Naturally, the next day it popped through my letterbox. OK, so I wasted £1.50, but the point is that you should guarantee that your subscribers get their copies before non-subscribers.

Dave Ziemann, London, UK
100031.3154@compuserve.com

Neil Ellul replies: *Point taken. The demand for subscriptions has been far higher than we had hoped for. The methods for fulfilling subs are now in place so that we can keep up with requests for the magazine. It's good that you thought it was worth paying for twice, though ;-)*

I very much like the thinness of your mag, the efficient use of space and the concise style. The technical level is well pitched and, although aimed at the business user, it doesn't appear to be so wedded to corporate needs that it is a tedious read for the small firm. I think it's important you continue in this mode, as Net access is likely to be of greatest use to small firms and home-workers; larger firms can look after themselves.

I would therefore welcome articles exploring the ways in which home-workers (inhabitants of so-called telecottages) can extend their client bases. For example, as a self-employed programer, I am interested in providing HTML design and editing services. How do I get involved in this? What are the practical dificulties etc? The emphasis on the UK in your mag is also welcome.

Rob Fellowes, Hereford, UK
stardust@starblazer.win-uk.net

Congratulations on the magazine – backseat surfing without the bullshit and much appreciated. Thanks in particular for the providers' listings at the back which put me onto Pavilion in Brighton. I live in Brighton so they save me on calls, cost less than most and have given excellent support with hardware problems and email difficulties abroad. An unqualified recommendation for both of you!

Michael Benis, Brighton, UK
michaelb@pavilion.co.uk

I sympathise with your correspondent Mr Mumby from Cumbria. The basic service supplied by Win-net is limited to email and Usenet groups and the extension to include the wider facilities is not particularly competitive.

It is frustrating to have to dial long-distance – your suggestion of Warrington is still a long-distance call from Cumbria and I suspect that a good BBS based in somewhere like Carlisle might be the real solution to Mr Mumby's problems.

I look forward to a future article about community access to the Internet via low cost, local service providers. Are there any network groups of people involved in the voluntary sector, for example?

Richard Boardman, Winchester, UK
rboardman@wdbof.win-uk.net

Your magazine is the best of the recent flood of Internet titles. To my mind, the outstanding feature is the What's On section, but why is the type size so small? I had to

ILLUSTRATION BY LINDA SCOTT

enlarge it on a copier in order to read it without getting a headache! Even my 14 year-old son, who has 20-20 vision and is a networking fanatic, found it hard going.

So please, save me from violating your copyright and increase the point size of this section. It'll increase your page extent by at least one page, but this is a small price to pay to win the loyalty of us 40-somethings!

MS Wallace,
Department of Journalism,
City University,
London, UK
M.S.Wallace@city.ac.uk

Neil Ellul replies: *No sooner said than done – see page 53 onwards for our new-look What's On section.*

It was gratifying to see our WWW movie database interface praised in your What's On pages' entertainment section. We'll have to try harder to get our whole server mentioned under the universities heading!

Just one point: in the November issue the URL given for the Movie Database was wrong. It should be http://www.cm.cf.ac.uk/Movies with a capital M (and, strictly, there ought to be another / at the end).

It would be helpful if you could correct that in later issues. I've amended things here so that .../movies will work as well as .../Movies but the capital is preferred, since it is then consistent with our mirror sites.

Robert Evans, Computing maths systems manager, University of Wales, Cardiff
Robert.Evans@computing-maths.cardiff.ac.uk

Angus Kennedy replies: *Glad you liked the review. I'm relieved to say we got it right in the last issue. And the site appears again this month on page 23, but...*

Your comments "...a severe lack of design input" to describe the Movie Database WWW interface were disgraceful. If that is how you see the interface, then fair enough, you are entitled to your opinion. However, you are not entitled to make such insulting and incorrect remarks in a read-only forum, without backing them up with an explanation.

You didn't consult me (the author of the interface) as to how it was designed, so you couldn't know how much design input there was or where it came from.

Since I started the Movie Database WWW interface project, back in the early days of the Web, I've had thousands of mail messages from people who use it (some 20,000 people a day!), all comments received so far have been complimentary, examples of which can be seen on www.cm.cf.ac.uk/Movies/credits.html

All suggestions for improvements have been considered, and many of them implemented. Everyone who mailed me with a valid reply address has received a reply.

Constructive criticism I can take, but your readers presumably take your opinions and advice seriously. To dismiss this project as just another piece of WWW junk which people seem to enjoy (which is how I read your comments) is insulting to myself, the Movie Database Team and all its users and contributors.

In answer to "...a severe lack of design input" consider this: the database was nominated for the Best of The Web 94 and received an honourable mention. In recognition of the work I put into this project, and my other WWW contributions, I was inducted into the World Wide Web Hall Of Fame.

Try picking up a book about the Web which doesn't recomend it or use it as an example of what WWW resources should strive to achieve.

If you have examples showing the "severe lack of design input", I will gladly explain my approach to you and your readers. If not, you owe your readers an apology.

Rob Hartill
robert.hartill@cm.cf.ac.uk

Neil Ellul replies: *The piece you are referring to was called* In My Humble Opinion. *This was my personal Top 10 servers on the Internet at that time. Therefore, by default I was already saying that the Cardiff Movie Browser was an excellent resource. So far, all issues of* **INTERNET**

have given coverage to the server elsewhere, and it should be taken for granted that it is a popular and useful site. That said, what I was remarking on was the graphic design of the interface, not the quality of the information contained there. IMHO the front end of the service could be made to look a lot 'prettier' without resorting to the massive graphics which usually make a service unusable for most people. I feel the present pages do not reflect the subject matter involved, namely a multimedia entertainment medium. As well as adding interest to the server, some well designed graphics could also help to guide users around what is a necessarily complicated interface.

I know this is cheeky, but I'd like to nominate the Fortean Times WWW pages for your What's On listings.

If you don't already know, *Fortean Times* is a journal of strange phenomena, puzzling experiences and weird portents, compiled from current news media with discusssion articles leavened by wry, gently mocking wit. It covers everything from spontaneous combustion, falling frogs and alien sex beasts, to extreme and unexpected weather disasters, bizarre behaviour, mystery animals and déjà vu (or did I say that already?).

Our site is experimental and kindly maintained for us by Dundee University's Microcentre. Our URL is http://forteana.mic.dundee.ac.uk/ft. A series of pages tells callers about the current issue and its contents, the background and philosophy of *FT*, back issues and other *FT* publications, and (ahem) subscription info.

In the works for 1995 are pages of useful Net and WWW addresses, details of our annual convention and a unique exhibition of weird artifacts, plus anything else we can think of. Anyway, look it up and if we're worthy as well as curious, bung us in the listing.

Bob Rickard, Editor, Fortean Times, UK
bobr@forteana.win-uk.net

Angus Kennedy replies: *We've now been there – turn to page 71 to see what we thought.*

Two articles in the November issue of **INTERNET** addressed the possibilities of access to the Internet via ISDN. Both the products mentioned, the Netblazer router and the ISIS PC board, are expensive for the private user. This, allied with BT's very high ISDN installation and rental costs, will ensure that the take up of ISDN by the private citizen will remain very small.

Leaving aside the BT charge, there are cheaper ISDN alternatives, albeit with different characteristics. I have recently been looking at ISDN PC systems and ISDN/ethernet PC routers based on PC ISDN boards and shareware software. These products require a little more expertise to set up, but I have found they work very well and are relatively cheap, although still several times the cost of the £200 we normally pay for a modem.

The systems are based on the packet driver ISDN software known as ISPA, produced by Herbert Hanewinkel in Neuried, Germany. The ISPA software interfaces at the lower protocol level to the CAPI ISDN interface, which has been developed in Germany for a large number of popular ISDN PC boards.

As it offers a packet driver interface, at the higher level ISPA will support a large number of both commercial and public domain applications, in particular PCTCP. The company producing PCTCP invented the packet driver interface so that its product would operate over a large number of different communications boards, of which ISDN is but one type.

I have achieved 61k over a single connection and 110k over two channels, as measured by FTP transfers, which is as good as you could expect. Unfortunately there is as yet no compression.

I have used an ISDN B1 board from AVM at about £850, but there are cheaper options at £300, although such boards may only be able to operate one channel. For use as an end system this compares favourably with the ISIS product at £1890. When used as a router, an old slow PC is sufficient to keep up with the relatively slow ISDN.

However, you have to add the cost of an Ethernet board at £50, but all this compares favourably with a Neblazer at £2995, which also needs the addition of an ISDN terminal adapter which will set you back another £800 or so.

For use as a router I have used the shareware software PCRoute. There are two principle drawbacks as compared to Netblazer. First, only IP is supported, so use with IPX and any other protocols is not possible.

Second, PCRoute has no security. A measure of security is possible in the ISPA software, which is capable of checking the calling ISDN number.

It must be added that there is no standard for carrying IP over ISDN so the product outlined above may not work to your Internet supplier and I have not had the opportunity to run tests to them.

However, ISPA supports about seven different protocols, each with a number of options, including the popular PPP.

I recently ran a network conference for 225 people with six Suns and 16 PCs connected to an Ethernet which was connected to the Internet via PCRoute and ISDN. The performance was surprisingly good, particularly as the delegates were making extensive use of the WWW.

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Send your messages to the Editor, Neil Ellul, by email to letters@computing.emap.co.uk; ***by fax on 0171 383 5578; or by mail to Messages, INTERNET, Greater London House, Hampstead Road, London NW1 7QZ.***

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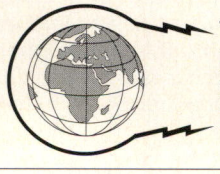

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Broadcasting

Opening up alternative channels of communication with listeners

Radio 5's The Big Byte regularly features the Internet and uses it as another way of talking to its listeners. Its presenter and producer explain why.

In the last few months the Internet has had a high media profile but much of the coverage has been sensationalist and superficial. However, Radio 5's *The Big Byte*, Britain's only year-round weekly computer show, takes a more in-depth approach. Its producer, Julian Mayers, says, "The Internet part of the show is growing each week and I make no apologies for that – it's the sexy thing at the moment – but we are trying to make it accessible to everyone."

One of the positive things about the Internet is the opportunity for instant feedback it offers and the production team encourages listeners to send email. At present the show gets about a dozen messages while it's on air and about 30 to 40 each week. That may not seem many from a total audience of almost 200,000, but it's more than the snail mail most programmes receive and it's a lot more immediate. According to Gareth Jones, the show's presenter, "People are shy to ask questions on air but are happy to ask them on email. It's like a telephone for the courageously challenged."

Julian is very keen to see the audience get even more involved. "The Internet provides a way for listeners to become part of the programme in a way they can't ordinarily. When we get audio email it will allow the audience to become broadcasters," he says.

He believes the medium is a good one for open discussion, although that means it's easy for correspondents to be abusive. However, the only negative criticism the show has had so far was an email from two undergraduate computer studies students who wanted it to be more technical. There has also been just one flame, from an Aberdeen listener, which took 20 minutes to download – something which hopefully won't be repeated.

But although it takes the Net seriously, *The Big Byte* is also trying to show its human face, particularly in spots like Internet Newsgroup of the Week. "We are trying to provide a snapshot of what's there so that people can become acquainted with the Net," explained Julian.

"One of the problems we've had is giving information out, especially all the URLs, so what we've started doing is saying email us and we'll send you an electronic fact sheet." Gareth adds, "It has become integral to the programme. There's too much information for people to write down but this is radio with subtitles."

The Big Byte was the first regular radio show to broadcast simultaneously on the Net and conventional radio, using M-bone (multicast backbone) technology. It was heard around the world, with listeners sending messages from such far-flung places as South Africa, Australia, Norway and Northolt.

The experiment involved transmitting the programme output to the Department of Computer Studies at Loughborough University, where it was processed through a

Sun workstation and put on to the M-bone, a portion of the Internet reserved for such experiments. Anyone with CU-SeeMe software could then hear the show live.

"I'd love to broadcast on the M-bone each week, if possible, if only someone would give us the equipment," said Julian. "But there are a lot of copyright problems. When we did broadcast on the Internet we wanted to transmit an item using music from the Beach Boys, but Warner couldn't permit it because it didn't have the worldwide rights, so we had to pull the feature."

In the future, he hopes the show can provide some sort of video multicast while the programme is being transmitted, so that people can see what's going on in the radio studio. "Although *The Big Byte* will never be a television show in its present format, that would be a way for people to see what's happening. It is certainly feasible."

Since the end of November *The Big Byte* has been holding a MIDI (Musical Instrument Digital Interface) jam on the Internet. At a BBC Networking Club FTP site there is a MIDI file containing data. MIDI users can reconstruct a simple backing track from it, which other users can then download and add to. Each week, the transcripts of a couple of features from the show are also downloaded to the BBC Networking Club's Web pages, complete with hypertext links to other documents.

Plans for this year are even more ambitious. Initially, the aim is to promote art on the Internet by putting up graphical images. These could be downloaded and used as screensavers, but Julian and Gareth also hope users will add to and manipulate the images, or be inspired to create new pictures of their own. They are also thinking about starting a global shaggy dog story, encouraging people around the world to add a few lines of their own as it builds up.

"I see the Internet as one of the most exciting communication devices or inventions of the century," says Julian, and at this stage the audience can have a major influence on how its use develops. He added, "If listeners or people on the Net have ideas about what they would like to hear, tell us and we'll do it."

Julian, Gareth and *The Big Byte* team can be contacted at big-byte@bbcnc.org.uk

The Big Byte's Gareth Jones (pictured left) – producing radio with subtitles

Campaigning

Friends of the Earth launches new environmental information service

Friends of the Earth (FoE) claims to be the largest, and one of the most influential, international networks of environmental groups in the world. With more than 200,000 supporters, it is represented in over 52 countries worldwide and now has a presence on the World Wide Web.

According to Richard Weatherley, FoE's IT manager, the service, which is dubbed 'FoEnet', "Offers Friends of the Earth further scope to confront government and industry with the facts about the environment – and potential solutions."

It is also aimed at the research community, schools and the general public, both in the UK and internationally and, he continues, "Through FoEnet we are making environmental information available in an interactive way to an important new audience."

Based on a Sun Sparc server 20 machine, FoEnet also carries details of current environmental campaigns, as well as advice on how the public can take practical action.

Other environmental information available online includes details of research into threats to protected wildlife areas, landfill sites leaking toxic chemicals to groundwater, river quality, acid rain and the dirtiest power stations in England and Wales.

FoE has more than 250 local groups in the UK and if you want to get involved in its activities, the WWW site explains how to find the one nearest to you. There are also links to other useful environmental services around the globe.

Weatherley adds, "The Internet is an important communications medium for the 1990s and beyond. It differs from traditional media because it provides new opportunities for public empowerment and participation in the emerging global information culture."

FoE hopes to extend the information service in the future. The intention is that projected new facilities will include keyword document retrieval, short video clips and a series of context-sensitive maps which will display local environmental data.

FoEnet carries information about local groups and environmental campaigns

Friends of the Earth's FoEnet can be found at http://www.foe.co.uk. Richard Weatherley can be emailed at richard@foe.co.uk

In a related move, the Centre for Alternative Technology (CAT), a major European site for sustainable practices and technology, is also joining the World Wide Web.

CAT's David Thorpe, says, "When you access CAT's page, located at Friends of the Earth's FoEnet service, you'll find a vibrant and informative array of comprehensive information about many of the centre's activities and how to access them."

He adds, "Did you know that the Centre has a thriving mail order service and a free information service on all matters green? Find out too about reed beds, water power and much more."

The Centre for Alternative Technology's home page is located at http://www.foe.co.uk/CAT You can reach CAT by email at cat@gn.apc.org

Film production

Online source of advice for would-be movie-makers and shakers

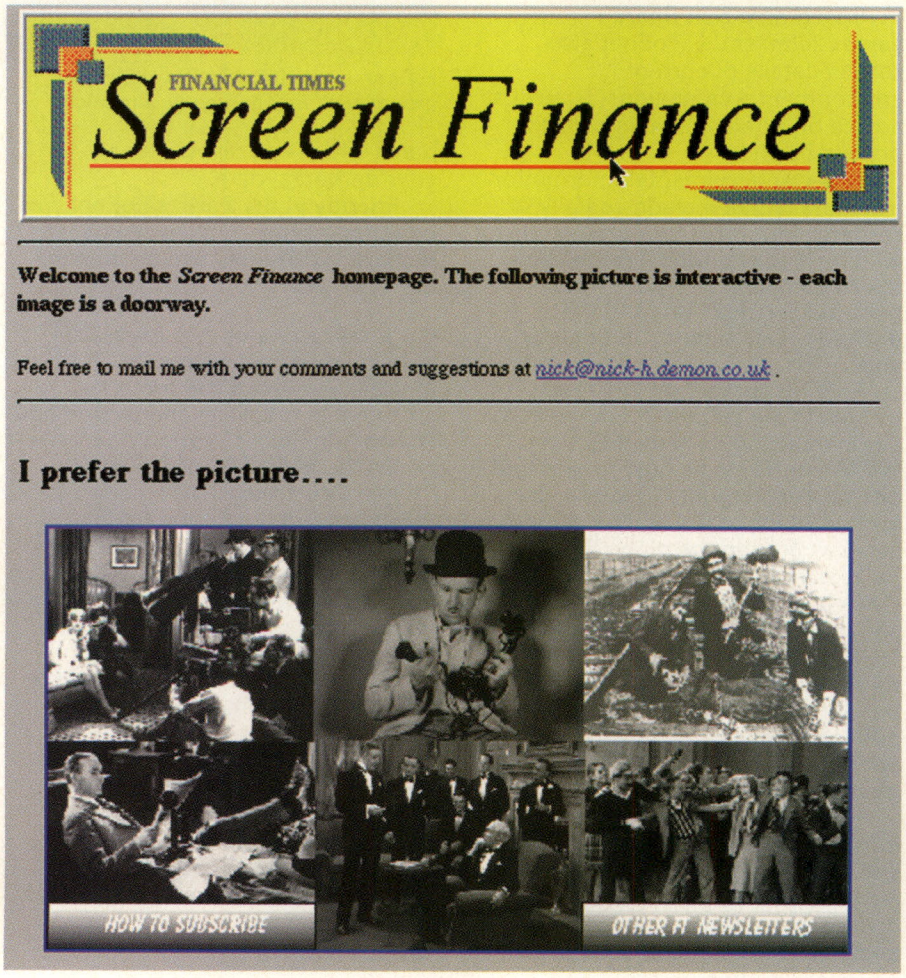
Producers, financiers, distributors and anyone else involved or interested in the process of getting films from the printed page to the silver screen, can now log on to the Screen Finance site, where they'll find comprehensive information and advice on all aspects of European film production, taken from the business publication of the same name.

Located at http://www.ibmpcug.co.uk/~scrfin/, the Web pages contain files on more than a hundred film production companies currently active in the UK, together with extensive data about organisations with money to spend on developing new ideas.

Users can also find details of trade associations and official bodies such as the British Film Commission and the EU-backed Media 95 audio-visual support programme. In addition, the service enables users to connect to dozens of other film-related information resources on the Internet.

Screen Finance deputy editor, Nick Hobdell, developed the concept and designed and built the system on his home computer. He says, "It seemed to fill a gap. There's a lot of information on the Net about American films and film-making but nothing about the UK and European industry.

"The idea is that it should be entertaining to anyone who wants to have a look. While we hope people directly involved in film-making will use and contribute to the service, we also want to help people with an interest in the subject to learn a little more about how films are actually made."


FINANCIAL TIMES
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Feel free to mail me with your comments and suggestions at nick@nick-h.demon.co.uk .
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The first thing people accessing the system see is a series of six film stills, each representing a specific part of the database.

There is, for example, the Internet Film Commissioner, where users can find detailed production information. The Internet Film Institute, on the other hand, allows people to connect to online film societies in countries such as the USA and Finland, and to access educational resources and legal papers.

There is also a Reading Room where users can browse through virtual magazines or call up articles dealing with everything from Hong Kong action movies to the THX sound system.

In addition, the Internet Film Academy provides up-to-date information on how current releases are performing at the UK box office and offers links to a number of international databases containing thousands of film reviews.

In terms of Financial Times Newsletters, the company which publishes *Screen Finance*, Nick agrees that the Web site is an important promotional tool. He says, "It shows we're ahead of the game, responding to needs which are not there yet but will be soon." However, he feels very strongly that "You have to do more than just put up your name. The Internet is such an elegant medium you have a duty to be intelligent."

Maintaining the pages takes a fair amount of work and Nick spends at least an hour a day collating and coding information and checking the hypertext links. However, he says, "From the feedback I've got it seems that people like it." In fact, although the Screen Finance pages have only been in existence a short time, other sites have already set up links to it.

In order to commemorate the fact that cinema is a hundred years old this year, Nick is compiling a hundred links to different sources of film information on the Internet. Each one will reveal something about the history of the medium.

He says, "It seems to me to be fitting to celebrate the technology that changed the world at the start of this century with the technology that will change it at the start of the next."

Some of the data is already on the Net but he hopes that people will also put up information specifically for this purpose. If you'd like to get involved and contribute to the Cinema 100 Links project, contact Nick at nick@nick-h.demon.co.uk

Visual resources

Cartoon characters caper on to the Internet, but that's not all folks...

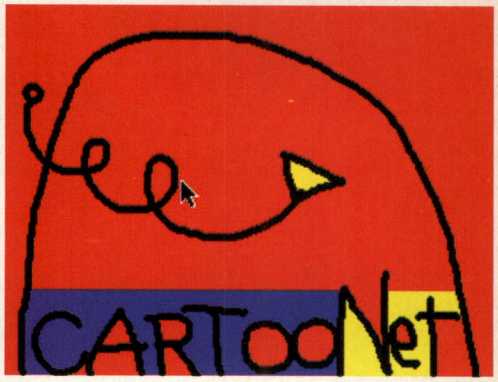
Project co-ordinator David Booth (second from left) and other CartooNet movers and shakers, pictured at a development meeting

Meet your favourite cartoon and comic strip characters on the Internet, courtesy of the European Cartoon Arts Network, which has just launched CartooNet at http://www.pavilion.co.uk/cartoonet/

Supported by funding from the European Union, the site is a showcase for graphic artists' work but, says project co-ordinator David Booth, "The Internet also offers a significant new distribution medium as well as a method of linking cartoonists and cartoon organisations across Europe."

So far, CartooNet has attracted considerable interest from all over the world, and in the first three weeks of its existence it had over 12,000 visits from the USA alone.

However, as John Davies, managing director of Federated Communications, which designed and developed the project, says, there is a serious purpose behind the gags and the humour. "The European cartoon and comic strip industry has tended to be overshadowed by its American and Japanese counterparts. The Cartoon Arts Network aims to raise the profile of European cartoon arts as an equal force in the international market.



"In addition, cartoon and comic strips have played an essential role in social integration and cultural criticism in multi-lingual societies such as the States and Belgium. So cartoon arts have an invaluable role to play in communicating for European co-operation!"

The organisers hope the first thing users notice is how good the site is to look at. As you would expect, the graphics are stylish and colourful, but care has been taken at every stage of development to ensure that the pages appeal to those who are less than familiar with computers, as well as grabbing the attention of habitual surfers.

David Booth is adamant that it's vital to get it right. "It's balancing functionality with entertainment and accessibility with detail.

"The EC estimates that by the end of the decade 40% of data will be transmitted electronically, and the amount of trade which takes place via electronic networks is increasing all the time."

CartooNet can be emailed at cartoon@pavilion.co.uk

Recruitment

Check the Net for situations vacant

In line with an American trend, UK recruitment consultant Price Jamieson has launched a jobs site on the Internet.

The company claims that the pages, which are located at http://www.gold.net/PriceJam/, have many advantages for candidates. They can look through the lists of vacancies whenever it's convenient for them, with no charge apart from the cost of the phone call. Should they be interested in a particular position, they can also email their CV straight to Price Jamieson.

For the recruiter, Price Jamieson's Andrew Swift believes that the Net is ideal because the vacancies are updated every week – or more frequently if necessary. He says, "The Internet offers lots of flexibility. If it's urgent, we can put jobs on overnight, with no cost to the client." The potential audience for ads is also vast because it's easy for people outside the UK to visit the site.

He doesn't see the Internet replacing more conventional forms of advertising, yet, but he does view it as "an important alternative".

Email pricejam@cityscape.co.uk

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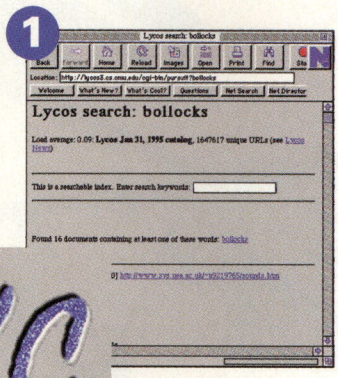
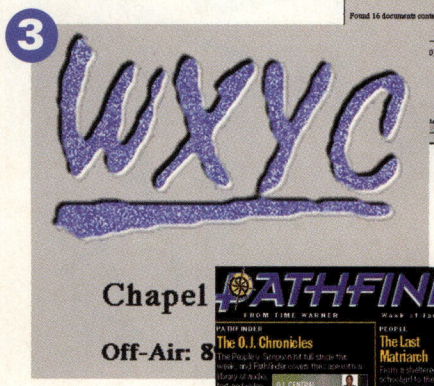
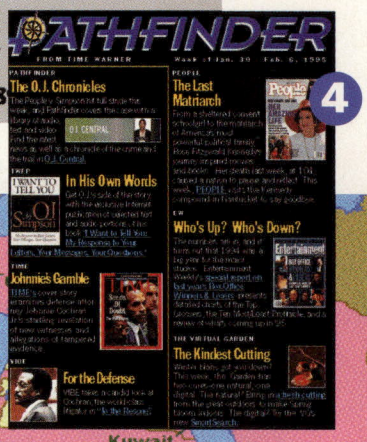
Pick of the month

What makes a great Web site? Angus Kennedy, What's On editor, lists his personal favourites. Some would say originality, graphics, interactivity, volume of information or weirdness. All these elements can make a place worth visiting, but for me a great site is one worth going back to. A great site enlightens, entertains or provides you with something useful but otherwise unobtainable. It saves you time, money or effort; it doesn't carry incorrect or misleading information; it isn't time-wasting or self-serving; and it isn't just an advertisement. These are the sites I keep in my bookmarks. They're not necessarily the greatest examples of HTML design but they are places I visit time and time again.







Originally from Australia, Angus Kennedy used to describe himself as a traveller but now he refuses to leave his computer screen. He's the man responsible for most of our new-style What's On guide.

1 **Lycos** http://lycos.cs.cmu.edu/
When I'm after something specific and not just surfing, this fine database of hypertext links is my best friend. It's quick and returns enough information to filter out the duplicates and chaff. When it's busy, it can take a few attempts to get access. If I can't get on at all, I use the cracking Harvest database.

2 **Yahoo** http://akebono.stanford.edu/yahoo/
You can search Yahoo but it's better for subject-based surfing and I use it when I'm looking for ideas in a certain area. There's so much on offer, though, that I usually get side-tracked and end up in some of the more bizarre corridors of the Net. The WWW Virtual Library has similar features, but Yahoo is far friendlier.

3 **Radio WXYC** http://sunsite.unc.edu:80/wxyc/
This real-time Internet radio station is a giant leap forward in transglobal media. It's a college channel playing determinedly alternative music and it's certain to inspire a new generation of independent broadcasters. Bandwidth allowing, this may eventually mean music transmissions will be released from their current regulatory straitjacket.

4 **Pathfinder** http://www.timeinc.com
A bold, beautiful and seamless site, this aims to promote Time Warner's massive multimedia stable. Time Life has always been at the cutting edge of direct coercion, sometimes to the point of intrusion, but you get real free products here, including an expanding daily news service, an extensive gardening database and coverage of the OJ Simpson case.

5 **US Travel Warnings** http://www.stolaf.edu/network/travel-advisories.html
One of the few complete resources on the Internet, this corker site supplies the US Embassy's current travel and consular advice. As I'm planning to travel through some politically unstable countries in the near future, I've subscribed to the free mailing list. Now I'll be notified of the hot spots as they ignite.

6 **The Virtual Tourist** http://wings.buffalo.edu/world/
This provides a useful way to locate regional resources. You can zoom into the virtual world map to find all the Chinese servers or get Peruvian travel advice and demographic data through CityNet. It should be updated more often, but it's still the best of it's kind and an essential research aid.

7 **Cardiff's Movie Browser** http://www.cm.cf.ac.uk/Movies
A painstakingly comprehensive and ultra-functional database of movie information which looks like it was (and it was) designed by a computer science PhD, and not a graphic artist. It's fully relational which means that after you've retrieved God of Gamblers, you can click on Chow Yun Fat, to see his full biog, then click on one of those masterpieces...

8 **Justin's Links from the Underground** http://raptor.sccs.swarthmore.edu/jahall/
It's just a simple home page from a dedicated individual, but it is also the richest source of off-beat, controversial and bizarre locations on the Net. Almost every link leads you to a prime conversation piece.

9 **TV Net** http://tvnet.com/TVnet.html
Browsing through this site is the visual equivalent of stuffing yourself with fruit gums and soft drinks. It's a well designed, handsome site with world-wide TV schedules and loads of televisual trivia but, for me, it's the Ultimate TV List that delivers the goodies.

10 **Vomitus Maximus Museum** http://www.vomitus.com/vomitus/
This one's in for two reasons, not just for it's well designed art gallery showcasing RS Connet's original, unfamiliar and high quality pictures accompanied by generous prose, but for it's shock value. It's relentlessly sick – and people you show it to will probably think the same about you.

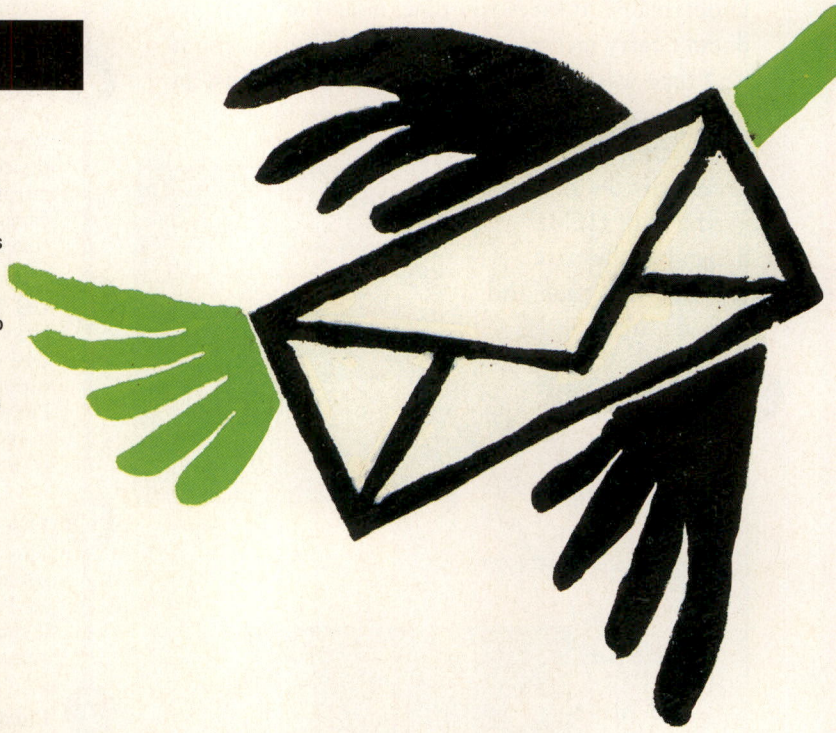
How do I get

Everyone else is doing it, you don't want to be left Well, start here with the easy-to-follow INTERNET

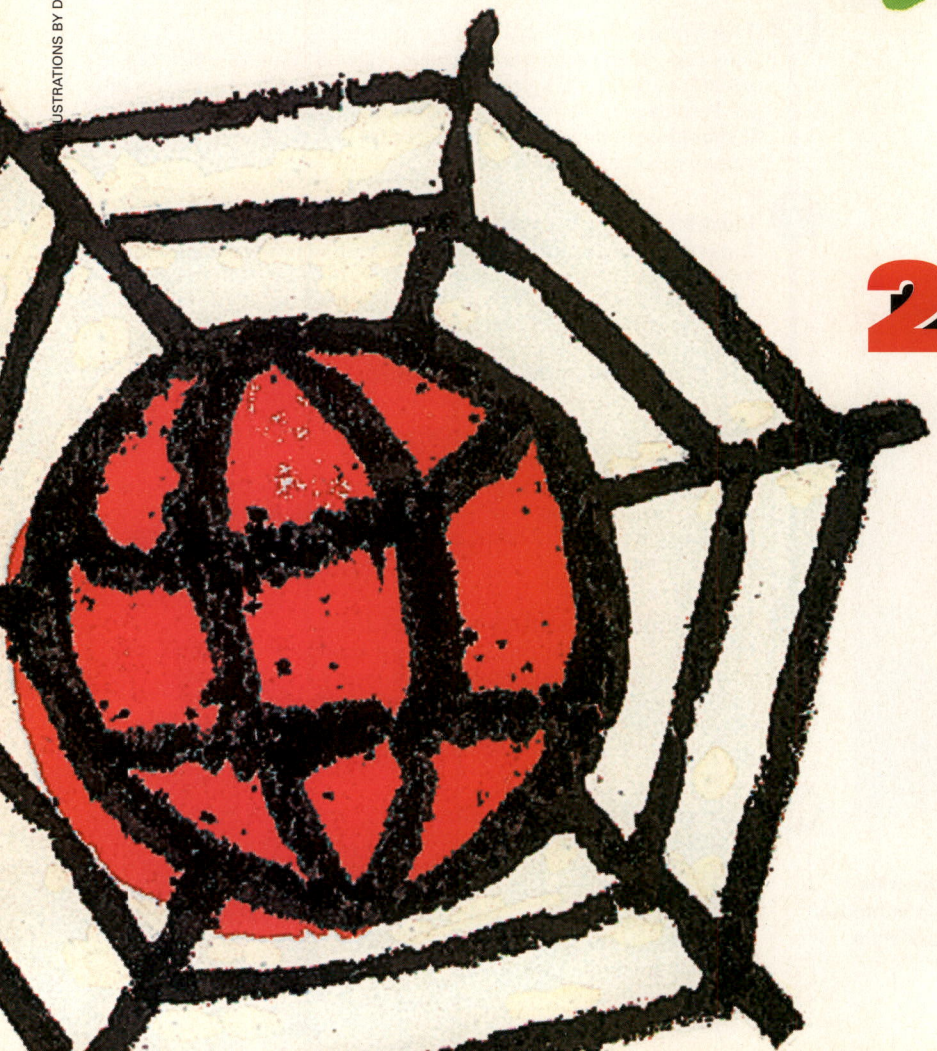
1 What is the Internet?

The Internet is a global computer network made up of hundreds of smaller networks linked together by the international telephone system. These networks are run by governments, academic institutions and corporations. Individual users or smaller companies link in to this matrix of networks by connecting to the nearest node, again via a phone line.

Estimates of how many people are connected to the Internet vary wildly but the present figure is around 30 million. The Internet is growing at a rate of 10% a month and, if current predictions are to be believed, by the year 2010 everyone, certainly in developed countries, will have a connection.



ILLUSTRATIONS BY DANIEL PUDLES



2 What's in it for me?

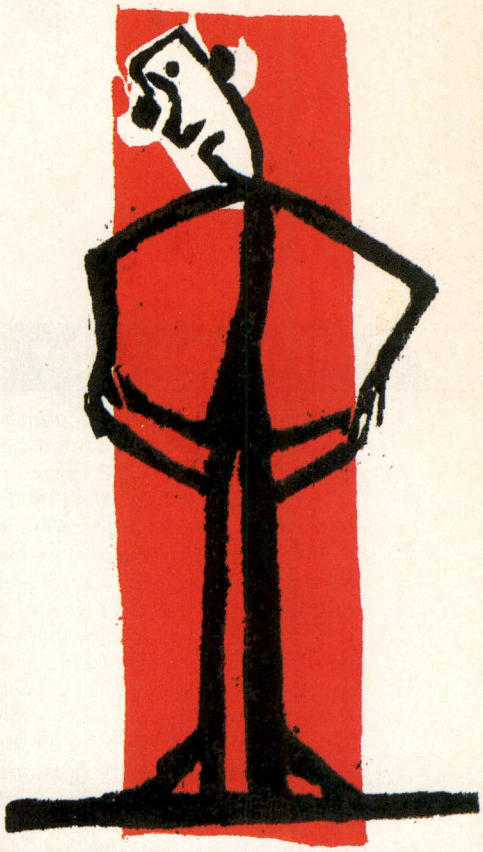
As the cost of connecting comes down, it becomes harder to find reasons not to join the Internet community. Initially, most people want to be able to use the Net to send and receive messages by electronic mail – everyone on it has a unique email address and so, once connected, you can communicate with them all.

It also offers the opportunity to participate in discussion forums – called Usenet newsgroups – on thousands of diverse topics. Usenet is also an excellent way of gathering and disseminating news.

The most hyped part of the Net, though, and what draws most people online, is the World Wide Web. This allows users to publish multimedia pages – containing text, graphics, sound and video – for other people to view. An incredible range of individuals, organisations and, increasingly, companies now put up pages.

connected?

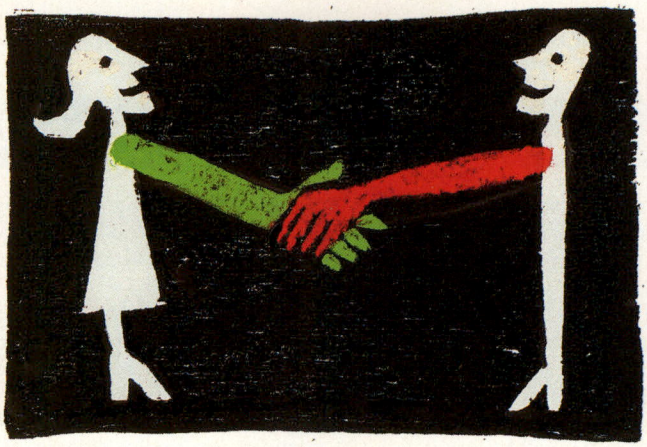
out, but where do you start? beginners' guide to going online



3 How do I become part of it?

By far the easiest way to start is to find a friend with an Internet connection. He or she will be able to demo the Net, showing you what it looks like and what it can do. They will also be an invaluable source of technical support when you make the decision to connect.

Having done that, you will need to get the right hardware and sign up with an access provider, which will handle the local link from your computer into the rest of the Internet. The important thing to remember here is that you only pay for your section of the Internet. You will be charged for your connection, but this will only ever be a local call into the Net, whether you are sending email to High Wycombe, or video-conferencing with Hong Kong.

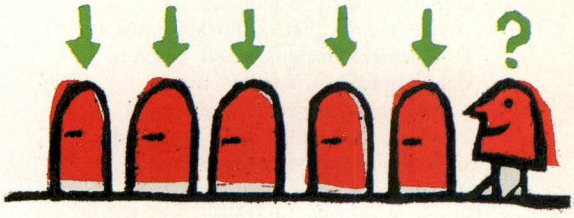


4 What will it cost?

Like anything in life, you get what you pay for. The more powerful your computer and the faster the communications link between you and the next point on the Internet, the better.

Of course a good system costs money, but the pay-off is that the faster your comms link, the less time you spend online downloading messages or data, which means you'll save money on phone bills. You will also have to pay your access provider a set-up fee and a monthly charge.

When choosing an access provider, it's important to go for one that has a POP (point of presence) close to you. A POP is the network node where you link into the Net and, if it's nearby, you only pay local phone charges.

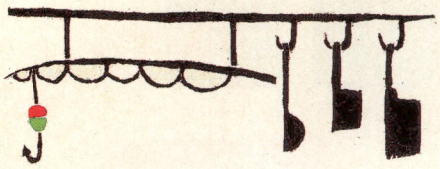


5 What sort of access do I want?

There are a number of different ways of connecting to the Internet. Which one you choose depends on whether you just want email facilities, whether you want to be able to use Usenet as well (ask for a UUCP connection), or whether you want full access, including the World Wide Web (you need an Internet protocol or IP connection for this). Full access starts at about £10 a month, but you might be better off spending around £25 a month, with support thrown in. NB: A bulletin board system (BBS) connection gives you limited email and Usenet facilities but not a direct link to the Internet.

Before approaching an access provider it's essential to think about a domain name – what you want your Internet address to be. Choose something short which says who you are, so queen@winsor.co.uk is a good one, elis.sec@win.cas.qofe.co.uk isn't!

6 What equipment do I need?



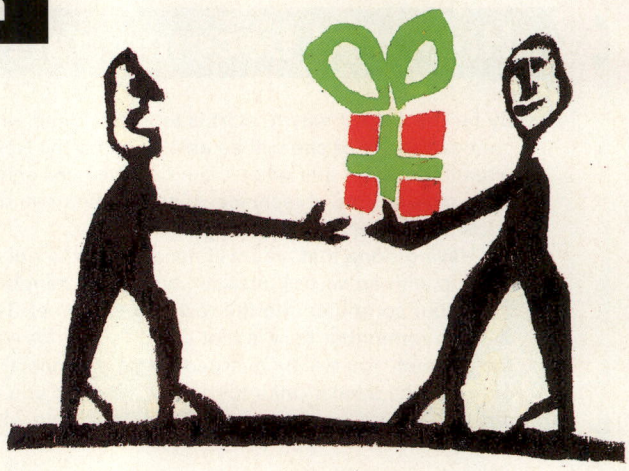
The basics are a computer (any type will do but most people use a PC or a Mac), a modem and a phone line. However, the minimum specification you should really be looking at for Web-browsing is a 486 PC with at least 4Mb of memory, colour support (preferably 256), sound (either built-in or via an add-on card) and a 14,400bps modem. If you already own a slower modem, say 9600bps, you can still begin to use the Net – in fact this is a fine speed for email and newsgroups. A 14,000 bps (V.32bis) modem can be now be bought for around £150, while the faster 28,800bps (V.34) modems will soon be under £200.

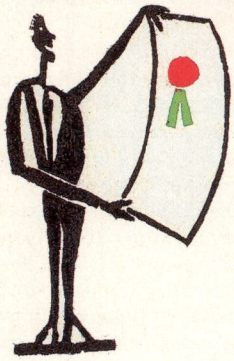
Companies may decide to opt for an even faster ISDN line, instead of the modem/phone line combination. This will give you faster access but the hardware and installation costs more – around £2500. If you are really serious about Internet usage and have a lot of people wanting access from the same site, or you intend to offer services such as Web pages yourself, you might want to go for a dedicated leased line. This will cost around £10,000 a year, but the connection stays open all the time and there are no additional call costs.

7 Where do I get software from

Your access provider should furnish you with the software you need to get started, usually on a floppy disc. The basics are TCP/IP software (Trumpet Winsoc for PC, MacTCP for Mac) and PPP (Point-to-Point Protocol) software. After these are installed, you should be able to run any of the commercial or shareware packages for email, FTP (file transfer protocol), news group reading and Web browsing.

Your provider will supply many of these, but after that the best source of software is the Internet itself. Tools for accessing databases, downloading files and browsing Web pages are freely available, mostly as shareware. Names to look for are Netscape Navigator, FTP, Archie and Telnet. These programs are for both PCs and Macs but there is equivalent software for other types of computer. You can also get software from books, magazines and, of course, other people.





8 What do I do when I am connected?

There's no doubt about it, the learning curve for using the Internet can be steep at first. Start by mastering email – to see whether you've got the hang of it send a message to internet@emap.computing.co.uk and put 'new user' in the subject line. If you've got it right, we'll send you a reply.

Learn about netiquette (the polite way to address fellow Net users) and read newbie documents (tips for beginners). If you have a question, check out FAQ (frequently asked questions) files, because you can be sure someone else has asked it before. These are dotted all around the Internet, particularly in newsgroups. When you try out Usenet, sign up to just a couple of groups to start with, otherwise you'll be inundated with postings. Looking at Web pages ought to be straightforward, but patience is sometimes required because, for reasons beyond your control, it's not always possible to locate a host and log on.

9 What can I do then?

Well, you can communicate with people all over the world, discuss philosophy, look at works of art of dubious quality, download pornography, check out train times in Garmisch-Partenkirchen, listen to college radio broadcasts, watch Disney movies, set up your own Web pages...The list is endless and, now you're online, so is the time you'll probably spend happily connected to the Internet.

.netkonect
Rapid and reliable Internet connections from Sprint International's European Reseller
FREE Internet access for 30 days without obligation
No joining fee
From only £10/month + VAT
Fast data transfer via the latest PPP software - FREE of charge to new users
The best Internet service on the market
CONNECT NOW
CALL 0171-345 7777
.netkonect - the only connection worth making

OS/2 WARP TRY & BUY

Tony Dennis *gets you on the Net by explaining how to install the contents of this month's INTERNET cover CD-Rom*

COMPACT disc

WARPING

Helpline: 01705 498147

OS/2 WARP and IBM BonusPak

STEP ONE

Make sure you have the right machine

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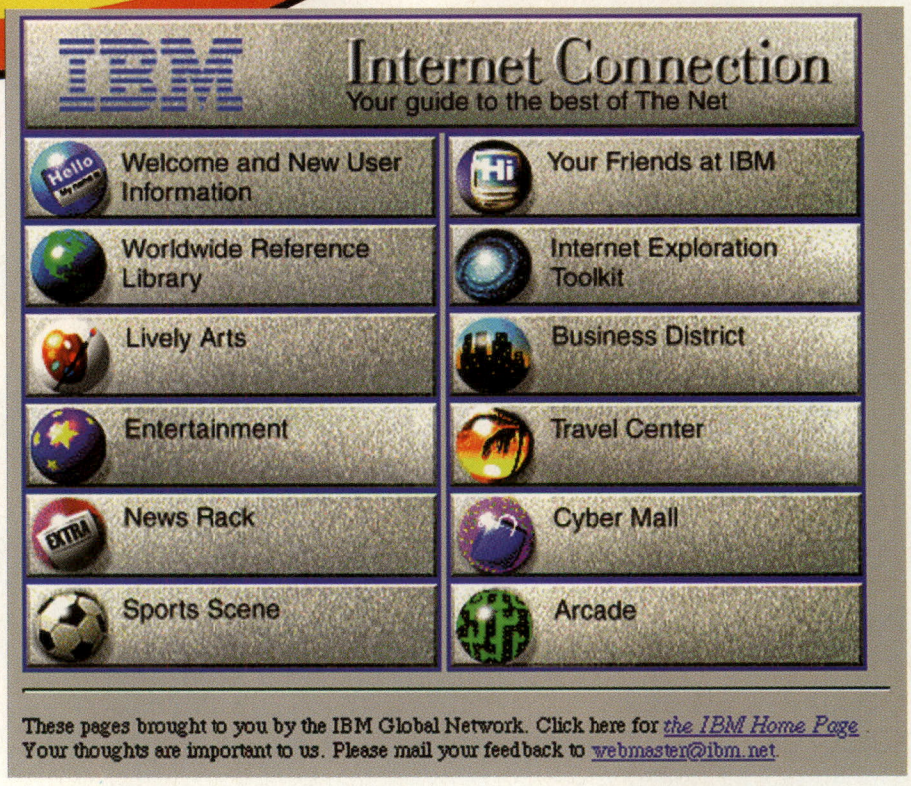
22H8707

These guidelines for OS/2 Warp Try and Buy are meant to help readers quickly get up and running with an Internet connection. The instructions given here are intended to be read in conjunction with the leaflet accompanying the cover mounted CD. Furthermore IBM has supplied additional information in the form of three help files – Warp.txt, Readme.1st and Readme – which are loaded onto the CD itself. Unlike some early releases of Warp, this is the OS/2 Warp Try and Buy edition. Hence it will expire after 45 days. Fortunately those who wish to carry on with Warp can convert to the fully supported version for a list price of £85. In fact the street price is closer to £50. Call IBM on 01329 242728 for details of your nearest dealer.

The most important point to stress here is that OS/2 Warp will run on ANY ordinary PC compatible computer. It is absolutely NOT the case that a machine manufactured by IBM – such as a PS/2 model – is required. Indeed Internet magazine utilised a Pentium PC kindly loaned by Gateway to try out OS/2 Warp. A little extra advice: the hardware requirements which IBM outlines in the accompanying leaflet should be treated as an absolute minimum. For example, although OS/2 Warp would run on a 16MHz 80386-based PC with 4Mb of system memory, a 486-based machine with 8Mb of memory is a more practical solution. Likewise the accompanying leaflet suggests that as little as 65Mb of disk space might suffice. This magazine would humbly suggest 120Mb hard disk is the true entry level size. A VGA screen plus a mouse are also necessities. Don't forget you may need two serial ports – one for the mouse and one for an external modem. The exceptions to this rule are if a mouse port is built into the computer or if the modem is an internal card. Internet would recommend that the serial ports should also have a 16550 UART (controller) rather than an 8250 UART in order to ensure reliable high speed modem operation. Check which UART is fitted to the COM port using the MSD utility supplied with DOS.

The really good news is that OS/2 Warp can be installed WITHOUT deleting DOS version 3.3 or later. It can also be installed over the top of Windows. Indeed if you intend to use Windows from within OS/2 Warp, it is highly recommended that you install Windows before Warp. The only hardware problem which the reader might possibly encounter concerns the CD-Rom drive. The cover mounted leaflet outlines a list of Warp-compatible CD drives. Additional supported CD drives are covered in the Warp.txt file. The snag is that while the CD drive may well work with DOS, there is no guarantee that OS/2 Warp will recognise it. For further information on problems with installing OS/2 Warp use your modem to call into the IBM bulletin board system on 01256 33665. Alternatively try IBM's FaxBack service on 01256 50096. This magazine utilised the CD drive installed within the Gateway PC by downloading a 'patch' from CompuServe. Finally if your PC can recognise the CD drive only when running DOS, your ultimate option is to create an entire set of installation floppy disks for Warp (of which there are approximately 18!) from the CD.


IBM
Internet Connection
Your guide to the best of The Net
Welcome and New User Information
Your Friends at IBM
Worldwide Reference Library
Internet Exploration Toolkit
Lively Arts
Business District
Entertainment
Travel Center
News Rack
Cyber Mall
Sports Scene
Arcade
These pages brought to you by the IBM Global Network. Click here for the IBM Home Page
Your thoughts are important to us. Please mail your feedback to webmaster@ibm.net

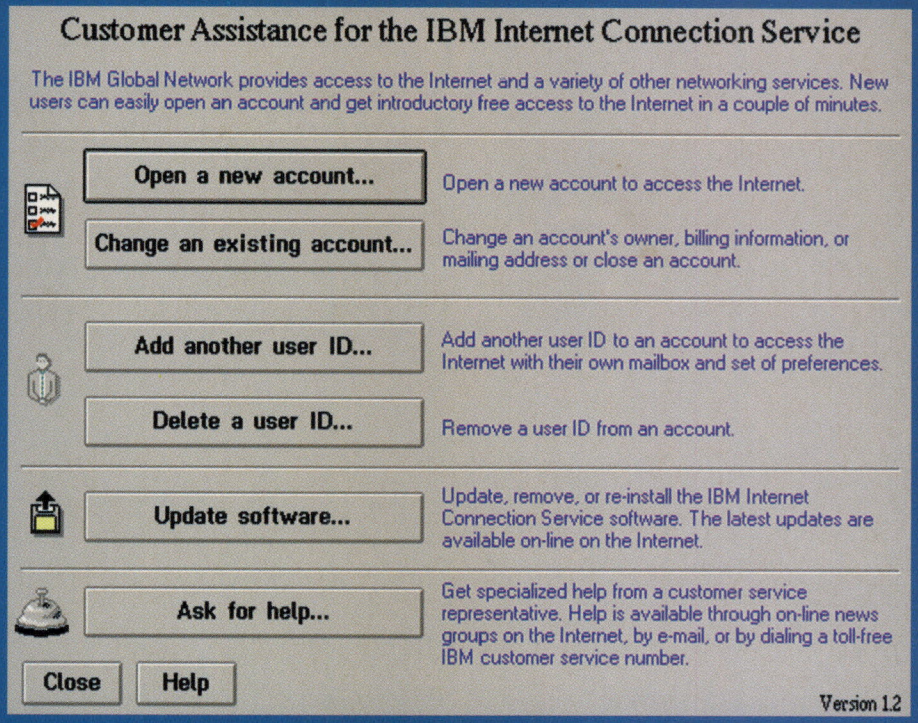
STEP TWO

Installing OS/2 Warp

There are a number of tasks to carry out BEFORE installing OS/2 Warp. First, make a note of the settings utilised by an existing Sound card and/or CD ROM drives. Look for an interrupt setting – such as IRQ2 – or a memory setting – such as 300, or a direct memory access setting – such as DMA2. Internet magazine would recommended deleting any duplicates of your system configuration files such as AUTOEXEC.BAK or CONFIG.BAK as they may be mistaken for the originals by Warp. Keep a copy of the original configuration files on a separate floppy disk too. Please note: it is not possible to install OS/2 Warp on a hard disk which has been compressed using a utility such as DoubleSpace or Stacker. However, after installing Warp, there is a version of Stacker which can be re-installed under OS/2. Additionally it is wise to have your Windows installation floppy disks or installation CD to hand as Warp may require a file which is not already installed on the PC.

In any event, before OS/2 Warp can be installed from the cover CD onto your hard disk, it is necessary to create two special floppy disks. You therefore need two empty DOS disks formatted for 1.44Mb. The correct type of 3.5 inch floppy disk should be marked HD – for high density – to indicate it has the correct capacity. Next, copy the files for these two installation disks from the CD. Do this by changing to your CD drive by typing D: or E: (or whichever letter denotes your CD drive). Then type in the command CDINST and follow the instructions on the PC's screen.

At the end of the automatic installation process, you will have one disk called Diskette 1 and a second called Installation Diskette. Leave the Diskette 1 in the floppy drive and reboot the PC. If your particular machine does not automatically boot from the floppy drive but only looks at the hard drive, you may need to reset the system startup parameters. See the PC's manual for instructions. With Diskette 1 in the floppy drive follow the instructions that appear onscreen while OS/2 installs.


Customer Assistance for the IBM Internet Connection Service
The IBM Global Network provides access to the Internet and a variety of other networking services. New users can easily open an account and get introductory free access to the Internet in a couple of minutes.
Open a new account...
Open a new account to access the Internet.
Change an existing account...
Change an account's owner, billing information, or mailing address or close an account.
Add another user ID...
Add another user ID to an account to access the Internet with their own mailbox and set of preferences.
Delete a user ID...
Remove a user ID from an account.
Update software...
Update, remove, or re-install the IBM Internet Connection Service software. The latest updates are available on-line on the Internet.
Ask for help...
Get specialized help from a customer service representative. Help is available through on-line news groups on the Internet, by e-mail, or by dialing a toll-free IBM customer service number.
Close
Help
Version 1.2

STEP THREE

Installing the Internet applications

Having reached this stage, you will have a working OS/2 system. The next objective is to install the Internet software onto the PC's hard disk. To do so means opening up a screen which displays the OS/2 system prompt. The latter will look something like this – C:>. This OS/2 prompt can be accessed either by going to the System Folder, followed by the Prompts Folder and clicking with the mouse. Alternatively find it by going to the Launch Pad menus and clicking on the Prompt icon. Having found the OS/2 system prompt the next step is to swap over from the hard disk drive to the CD drive. If the CD is actually the PC's drive D, you can do this by typing D: or if it is drive E, type E:. Next change from the CD's root directory to the directory for this country which is labelled UK. This step is achieved by typing in CD UK and pressing Enter. The screen prompt should change so it now shows something like – D:\UK. Typing in INSTALL will therefore start the BonusPak software installation process.

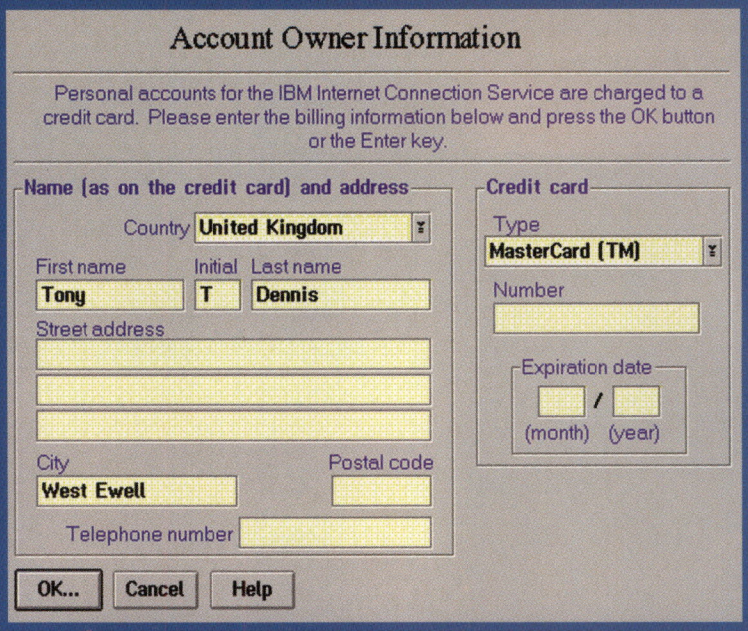
Initially the PC's screen will display a whole list of applications which can be installed. The relevant application here, however, is the one labelled Internet. Highlight this option by moving the cursor to the correct entry using the mouse. Clicking on the Internet option twice will start the installation process for IBM's Internet Connection for OS/2. The program will ask if you wish to install the programs on drive C in a directory labelled TCPIP. Some users may wish to install the Internet application on a second hard disk in which case they would delete the option offered onscreen and type in D:\TCPIP instead to install on drive D.

Once satisfied that you wish to go ahead with the installation process, press the Enter key and the program will indicate that it is copying the relevant files from the CD onto the PC's hard disk. At the end of the copying process, the software will ask permission to reboot the machine. Don't forget if the PC is rebooted, all the applications will shut down.

A reboot is necessary otherwise the relevant programs which enable the Internet connection to work properly won't be loaded up and waiting to start. Selecting the Shut Down option on the OS/2 Launch Pad menus, will cause the PC to reboot cleanly. We don't recommend that you reboot by switching the power off and then back on again! OS/2 will probably ask several times whether you really want to shut down and risk losing data. If you are sure no other application is running, the correct action is to be brave and say YES to the option which warns of possible loss of data. At this stage the screen should clear and indicate that you can safely turn the power off or restart by pressing the Ctrl, Alt and Delete keys simultaneously. It is now safe to choose either course of action and reboot the machine.

STEP FOUR

Internet connection configuration


Account Owner Information
Personal accounts for the IBM Internet Connection Service are charged to a credit card. Please enter the billing information below and press the OK button or the Enter key.
Name (as on the credit card) and address
Country United Kingdom
First name Initial Last name
Tony T Dennis
Street address
City
West Ewell
Postal code
Telephone number
Credit card
Type
MasterCard (TM)
Number
Expiration date
(month) (year)
OK... Cancel Help

Once the PC has rebooted, it is best to first close the OS/2 Prompt Window by typing EXIT and then pressing the Enter key. You can now look at the IBM Internet Connection for OS/2 software by clicking with the mouse on the appropriately marked folder. The screen will display a range of new icons including another folder this time marked IBM Internet Customer Services. Go to the icon marked Registration and click on it. Now select the option to open a personal account. Before any further progress can be made, it is necessary to accept IBM's licensing agreement by pressing OK after reading through the legal conditions. Next fill in the form giving your personal details (name etc) and chosen method of payment, ie Visa or Access/MasterCard.

Although you need to give your credit card details in order for the service to work, IBM gives you three hours online free. This means that you can go onto the IBM network and try it out before paying anything. The credit card information has to be for a valid card with some credit available in the account or the system won't accept you!

The system will next invite the user to select which software driver will be used for your modem. If unsure select the option labelled default. Alternatively look through the list to see if your particular make or model of modem is covered. Finding the correct software driver for your modem means that it is more likely to work correctly at high speeds. Ensure that the correct modem port is selected. The best way to do this is to have the modem switched on; connected to a known serial port (ie COM2); and plugged into the BT/Mercury wall socket.

Having set up the system correctly, the program next displays a list of three choices for your email address, deduced from the personal details you entered earlier.

The next window provides an option that sends your registration details to IBM. If you are ready to do this the software will attempt to connect to IBM's network. OS/2 Warp will now load an application called Dialler. This application displays a number of icons: computer, modem, phone, IBM network, and Internet. These icons change colour as the call progresses. Once the modem call is accepted there will be a delay while the network accepts your registration details. The network will provide a screen showing your account; User ID; password; and Internet mail address. Be very careful to write the password down somewhere safe as you will NEVER see it again.

At this point you can choose the phone number which is closest to your geographical location. Please note that IBM is updating this list constantly and you can change the number later if you desire. Once you have picked a number, the system will disconnect you and it is necessary to redial to use the IBM Internet network in earnest!

STEP FIVE

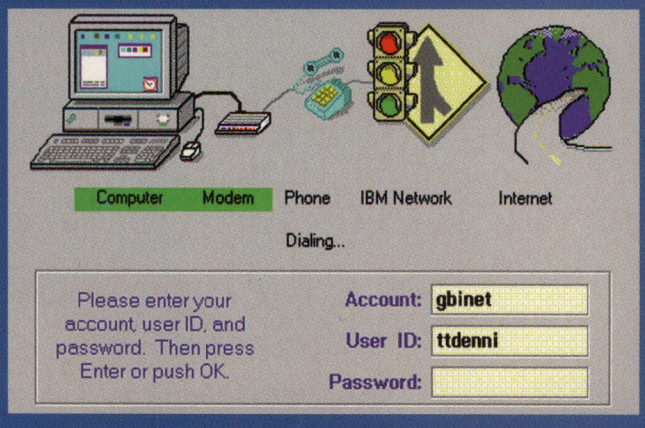
Using your Internet connection

INTERNET suggests that readers should go straight to the icon which is marked Retrieve Software Updates. This will download the latest software revisions from the IBM network. The PC will display a screen which asks – do you want to connect now? Click on the Connect icon and the program automatically starts up the IBM Internet Dialler utility. Press the DIAL button and you will be connected to the Internet.

The system will probably display a message which warns that the subsequent software downloads may last between three and 20 minutes. However, it is well worth obtaining the latest software revisions in order to Surf the Net properly. For example, you will need to download IBM's Web Explorer in order to look at WWW (World Wide Web) pages. The Web Explorer, is not carried on the cover CD nor is IBM's NewsReader facility for obtaining information from the many news groups which form part of the Net.

To obtain the latest software updates, the reader has two choices. One option is to use the icon marked Assist which provides general help with IBM's Internet Connection. The more direct approach is to go to the icon marked Retrieve Software Updates.

It makes a great deal of sense to download both NewsReader and Web Browser in one go but this may take some time (26mins at 9600 for both).


Computer Modem Phone IBM Network Internet
Dialing...
Please enter your account, user ID, and password. Then press Enter or push OK.
Account: gbinet
User ID: ttdenni
Password:

STEP SIX

Making a regular connection

Whichever route you have picked to retrieve the software, the program will start by opening up the Dialler application. Insert your password if the computer is not already displaying a set of asterisks (where your password should be). As the modem call progresses, the software moves through the icons starting at the icon labelled computer until it reaches the icon named Internet. The PC will now beep to indicate that an Internet session has been established.

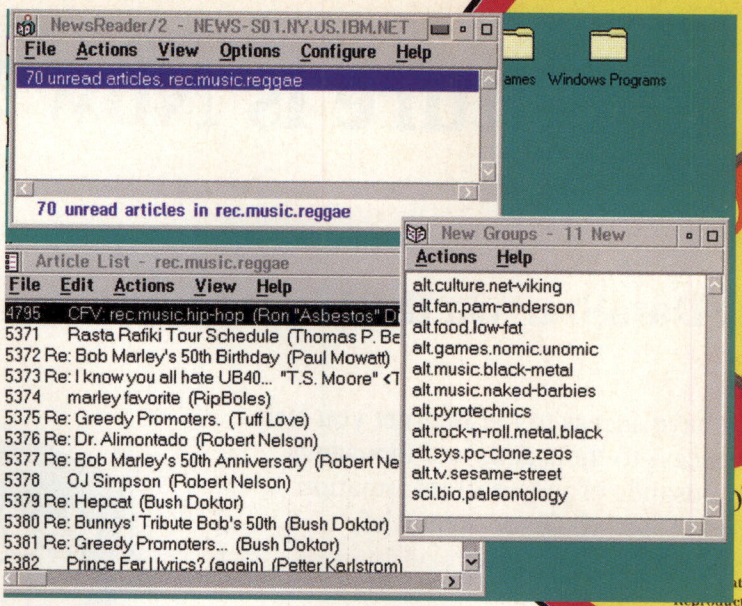
Next the system will ask which new programs you wish to download. If there is nothing you need skip this stage.

STEP SEVEN

Using NewsReader/2

Having downloaded NewsReader/2, you can use it to browse through the Usenet news groups on the Net. Once the connection has been established, change screens and click on the NewsReader/2 icon. When you first do this it will be necessary to wait to download the up-to-date list of available news groups. This is long but again is a necessity for anyone wishing to read newsgroups, and should only need doing once. Indeed, when **INTERNET** carried out this very exercise there were 7393 groups!

The PC should now show a complete list of newsgroups to which you may wish to subscribe. If you haven't joined anything yet, use the Search facility to look for one of interest. Under the Search menu select the Find option and insert a keyword such as 'reggae' to find a newsgroup of interest to you. Depending on the results, click on the groups you want to add to your personal selection. Double click on a particular newsgroup and the Articles list menu comes up. This window lets you select a message from the subject header. Once you have found a message of interest, double clicking on it will display the complete text. If it contains information you need, store it back to disk using the File option.


NewsReader/2 - NEWS-S01.NY.US.IBM.NET
File Actions View Options Configure Help
70 unread articles, rec.music.reggae
70 unread articles in rec.music.reggae
Article List - rec.music.reggae
File Edit Actions View Help
4795 CFV: rec.music.hip-hop (Ron "Asbestos" D
5371 Rasta Rafiki Tour Schedule (Thomas P. Be
5372 Re: Bob Marley's 50th Birthday (Paul Mowatt)
5373 Re: I know you all hate UB40... "T.S. Moore" <T
5374 marley favorite (RipBoles)
5375 Re: Greedy Promoters. (Tuff Love)
5376 Re: Dr. Alimontado (Robert Nelson)
5377 Re: Bob Marley's 50th Anniversary (Robert Ne
5378 OJ Simpson (Robert Nelson)
5379 Re: Hepcat (Bush Doktor)
5380 Re: Bunnys' Tribute Bob's 50th (Bush Doktor)
5381 Re: Greedy Promoters... (Bush Doktor)
5382 Prince Far I lyrics? (again) (Petter Karlstrom)
New Groups - 11 New
Actions Help
alt.culture.net-viking
alt.fan.pam-anderson
alt.food.low-fat
alt.games.nomic.unomic
alt.music.black-metal
alt.music.naked-barbies
alt.pyrotechnics
alt.rock-n-roll.metal.black
alt.sys.pc-clone.zeos
alt.tv.sesame-street
sci.bio.paleontology
Windows Programs
IBM
OS/2 WARP
IBM Bon
national Business Machines Corporatio
Reproduction, use and transfer restricted.
See IBM conditions of use.

STEP EIGHT

Using Web Explorer

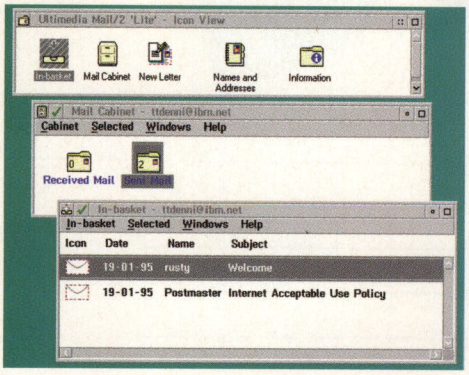
Once a Net session has started, go to the Internet Connection folder and click on the Web Explorer icon. The program then displays its copyright notice and you therefore need to click on the box marked OK in order to proceed. By default the home WWW page will have an address which looks like this – http:// www01.ny.us.ibm.net

Internet is full of WWW pages worth visiting but let's use the Net to send a postcard as a demo. The address you need is http://postcards.www.media.mit.edu/Postcards

You give this address to the system either by using the mouse to click on the blank line below the buttons in Web Explorer, and then typing it in. Or you use the File menu; choose Open document (URL) and enter the address. Once the desired WWW has appeared it may be wise to go to the Quicklist and select Add Current Document to ensure you find the page again.

STEP NINE

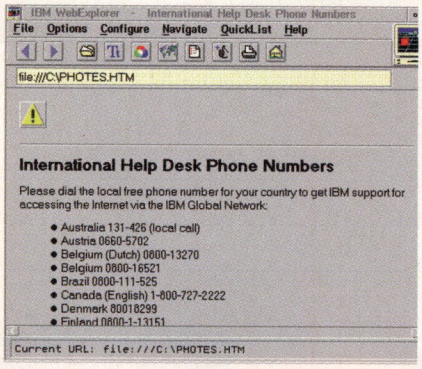
Sending mail



OS/2 Warp comes with built-in email. To use it, first click on the folder marked Ultimedia Mail/2 Lite. There will be five icons displayed onscreen, all of which are self explanatory.

For example, the user keeps Net mail addresses – which take the form of aperson@company.co.uk – in the folder marked Names and Addresses. On connection to the Net, it is advisable to immediately click on the icon marked In-basket. This will download any new mail from IBM's network. New and unread messages will appear in a folder marked Received mail. All users should initially receive two messages so they can tell the service is working properly. One message is marked Welcome while the other is from the Postmaster detailing Internet Acceptable Use Policy. To send mail, go to the icon marked New Letter.

The next step is to fill in the missing data - such as recipient's Net address; the subject and the message text. You can now send a message via the Net.


IBM WebExplorer - International Help Desk Phone Numbers
File Options Configure Navigate QuickList Help
file:///C:\PHOTES.HTM
International Help Desk Phone Numbers
Please dial the local free phone number for your country to get IBM support for accessing the Internet via the IBM Global Network:
• Australia 131-426 (local call)
• Austria 0660-5702
• Belgium (Dutch) 0800-13270
• Belgium 0800-16521
• Brazil 0800-111-525
• Canada (English) 1-800-727-2222
• Denmark 80018299
• Finland 0800-1-13151
Current URL: file:///C:\PHOTES.HTM

STEP TEN

Upgrading to full OS/2 Warp

As the 45-day trial period draws close to an end, you will undoubtedly need to know how to upgrade to a fully working version of OS/2 Warp. The relevant upgrade CD or disks can be obtained from your local IBM dealer. Unfortunately it is not possible to install the new unrestricted software over the top of the existing OS/2 system software. Therefore you need to remove the old files using a special OSDELETE command which comes with Warp. Before doing so you need to create a set of three maintenance disks as outlined in the cover disk leaflet. Although the Try and Buy system files need to be removed this should not affect the operation of installed applications such as IBM's Internet Connection. For more infrmation on the replacement of OS/2 Try and Buy call the OSDelete technical support desk on 01705 498147.

Help! If you have a problem installing OS/2 Warp, don't worry because help is at hand. Telephone 01705 498147 or email tom001@ibm.net

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backstage pass

Monica Snell *checks out the online music scene in the States and finds out how record companies are using the Net to promote their artists*

Upset you couldn't get tickets for your favourite band's latest tour? Don't worry, via the Internet you can see the band and interact with 20,000 other fans from the comfort of your own living room.

Although several rockers, including Billy Idol and Mick Jagger, have been surfing the Net for some time, the Internet has only recently attracted widespread attention as a medium for those with a musical bent.

Of the 8,000 groups listed on Usenet, a number centre solely around music, either individual artists or types of music. Last year there were several major musical events on the Internet, plus a couple of music industry scandals involving email addresses.

One of the first in the music industry to jump on the Net bandwagon was MTV, when former MTV VJ, Adam Curry, created the Cyber Sleaze Report, an Internet record review and music industry gossip sheet. This featured the letters 'MTV' in its address and, when he left the company, MTV brought a lawsuit against Curry for use of the initials. The case was finally settled and MTV kept the address (Curry's site is now at www.metaverse.com).

Chatting with musical heroes is also a popular pastime on the Internet. Warner Bros Records, one of the largest companies in the US, has decided to promote artists via a weekly, interactive online talk show called Cyber-Talk. Broadcast every Monday night over America Online (keyword: Warner), Cyber-Talk offers its audience a chance to converse with different musical guests. Users can also download tour dates, biographies and press information about the artist.

According to Warner's Vicki Etchart, since the first show in July 1994, featuring Indie artist Perry Farrell, former singer with Jane's Addiction, the one-hour conferences have sold out every time. The active question area only holds 600 people but thousands can watch.

Not to be left out, service provider Prodigy has also booked online 'gigs' and has broadcast artists such as Aerosmith, Peter Gabriel and Meat Loaf in its chat stadiums. Because of the interest in these events, Prodigy is developing larger virtual stadiums to house up to 20,000 users.

However, fans on the Net can also download music and even view live concerts.

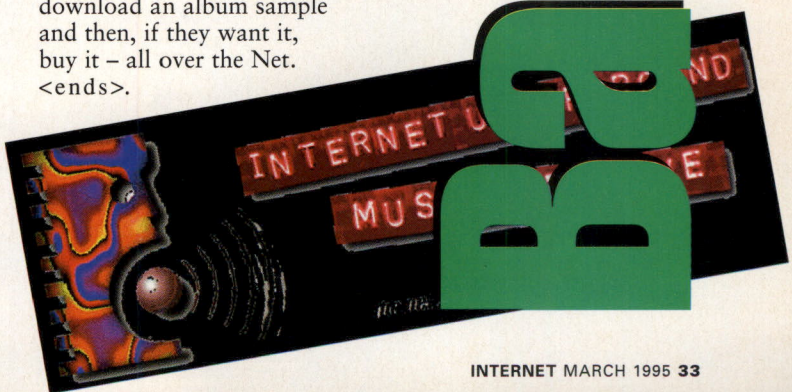
"All users need is a direct connection to the Internet, a sound card and software to decompress the digitised sound," said Jeff Patterson, co-founder of IUMA (Internet Underground Music Archive – Gopher, FTP and WWW to sunsite.unc.edu in the directory pub/electronic-publications/IUMA).

IUMA provides independent artists with a way to promote their music worldwide. Patterson, who incidentally met his IUMA business partner on the Internet, said, "For so long it has only been text and images on the Internet. Audio contact is the next step."

Although it can take around half an hour to download a five-minute recording, Patterson insisted that technological advances are helping to reduce this. He explained that with a 28,800bps modem, the average download time for a five-minute track has been cut to around 10 minutes.

Live concerts, particularly the Rolling Stones' performance, generate a lot of publicity, but few users can actually access them as they are broadcast over a technology called M-Bone. This is an experimental multimedia service which can send video over the Internet. However, to receive it you need a special T1 line connection, not something many people have.

Patterson believes the Internet will change the way the music business operates. Independents can start to become a force, even without the backing of record companies. Buying music will also change and he foresees a system where users will download an album sample and then, if they want it, buy it – all over the Net.
<ends>.



WARNING!

Explosion of interest could cause Internet to implode

The Internet is in danger of collapsing. Lisa Armstrong talks to Leonard Kleinrock, one of its original architects, about the need to build a new structure

The Internet is in need of a major overhaul, proclaimed networking expert Leonard Kleinrock. The man who pioneered the development of Arpanet, the Internet's predecessor, has advocated a new architecture for the expeditiously expanding Internet.

Kleinrock is chief operating officer and chair of the US-based Technology Transfer Institute and chair of UCLA's Computer Science Department. His work led to Arpanet's birth, when its first node came to life at UCLA in 1969, and Kleinrock has helped the technology evolve into today's hugely popular Internet.

But now, the network needs help, he said. "Today, three events have happened to create a crucial juncture for the Internet," said Kleinrock. "The Internet has exploded in use and reach, the US government administration is promoting the information superhighway and the commercial world has seen the massive business opportunities on the Internet."

Kleinrock explained that "A whole new architecture needs to be built into the system. Issues cannot be handled by add-ons."

The issues that Professor Kleinrock points to include security, dissatisfaction with the Internet's 'best-effort' service and addressing considerations. These considerations mirror the most oft-heard complaints of Internet users. In an attempt to deal with some of these problems, the Internet Engineering Task Force (IETF) has recently made recommendations for the new Internet Protocol, Internet Protocol Next Generation (IPng).

"IPng is the first step," said Kleinrock. "It has extended addressing far enough to last a very long time. However, it makes the assumptions of packet-switching and best-effort quality of service. This is not suitable for applications such as voice, for instance. If you and I are having a conversation and some of my words and some of your words are missing, then we are not communicating."

Best-effort service means that Internet users can request bandwidth to transfer data and, if the necessary bandwidth is available, the data will be sent. Otherwise, it's too bad for the user. "Bandwidth is more than an Internet protocol issue," he said. "The IP layer is only one layer of many."

One of the loudest complaints regarding the Internet is security – or lack of it. Along with valuable on-line information, those who surf Internet waters face the security hazards presently inherent in the Net. Computer hackers have established their own extensive networks, including underground bulletin boards containing newsletters, contacts and hacking information sources. The hacker problem is especially pertinent to the relatively recent onslaught of commercial Internet users.

Dr Leonard Kleinrock began his study of data networks in 1959, when he submitted his PhD proposal to MIT. He received both his Masters and PhD degrees in Electrical Engineering from MIT.

His work, entitled Communication Nets, developed the fundamentals of packet-switching and was published in book form in 1964. These principals, and Kleinrock's further research, furnished the basic technology of today's Internet. Leonard Kleinrock can be contacted on lk@cs.ucla.edu

"A site or company needs to have a clear, workable policy on who can get in and out," stated George Armstrong, a systems security consultant in the US. "There's a happy medium between isolation and total communication." Firewalls, servers with restricted access software and routers which determine who can be connected, are a popular Internet security device. But they are not fail-safe. They allow users to secure their own networks from intruders, but as soon as users connect to other networks, they are at the mercy of others' security systems.

"If you allow anyone into your network, no matter what you have at your end, there is no protection once they log onto your system," stated Armstrong. "If one site is not secure, all users connected to it are at risk," he said. "The Internet is not at risk by foreign governments, just plain old bad guys. The bad guys know who the good guys are and keep the good guys in the dark."

With the Internet overhaul he advocates, Kleinrock wants a built-in security system. "We need a comprehensive security architecture, not just add-ons. We need to build authorisation, encryption and passwords into the hardware and software," he stated. "How is not yet clear. It's a research problem needing experimentation."

Kleinrock chairs the US National Research Council's Computer Science and Telecommunications Board (CSTB). The National Research Council operates under the US National Academy of Sciences, independent of the US Government. In May, a CSTB-appointed committee presented a report entitled *Realising the Information Future: The Internet and Beyond* to the US National Science Foundation. The paper made specific recommendations for the Internet overhaul.

"We fear if we let the market settle this, we may end up with solutions that preclude applications from ever arising because the network won't be able to support them," said Kleinrock.

George Armstrong agrees that security in particular is a major Internet issue, but he has doubts about the feasibility of an overhaul, which he says would require regulatory and government control – and the Internet community may not take kindly to that.

"There is no way to control hacker tools as long as there are FTP [pirate] sites and underground bulletin boards, short of total regulation. And I don't think we could afford it," said Armstrong. "That would require standards and a governmental regulatory committee. It's just not enforceable for financial reasons."

Armstrong favors add-ons like one-time encrypted passwords. In addition, he said, "Vendors need to get involved in security at the developmental level."

Recommendations are currently being made by the Internet Engineering Task Force Area, the IETF subgroup in charge of IPng, to incorporate encryption-based security at the bottom levels of the IP protocols. This will ensure authentication of data packet origins.

But Kleinrock insists the Internet he originally helped to create needs changes in the form of a new architecture. What is urgently needed, he said, is "a more global view and long-range vision of the Internet. This will ensure a data network open to all users, applications, information service and network service providers, as well as future technological changes. And this won't happen without guidance." <ends>

As Long as They Keep Adding Pieces, We'll Keep Making Them Fit!

Gopher
- Automatic decoding
- Concurrent downloading
- Multiple image display

Email
- Automatic attachment viewing
- Keyword filing options
- SMTP/POP client
- Drag & Drop
- MIME

InterCon
TCP/Connect II®
Macintosh & Windows

Telnet
- Keyboard remapping
- DEC VT52-VT320
- IBM TN3179g, TN3278
- Tektronix

Remote Dial-In
- Built-in SLIP/PPP
- Log–on scripting
- Remote edition for use w/ modem

WWW
- High performance Web client
- No helper applications needed
- Fully integrated
- Universal "Hot Lists"

Best New Communications Software
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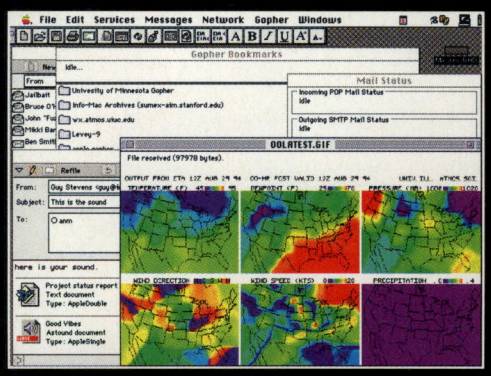
1994
FINALIST

BUYERS ASSURANCE SEAL
INFO WORLD



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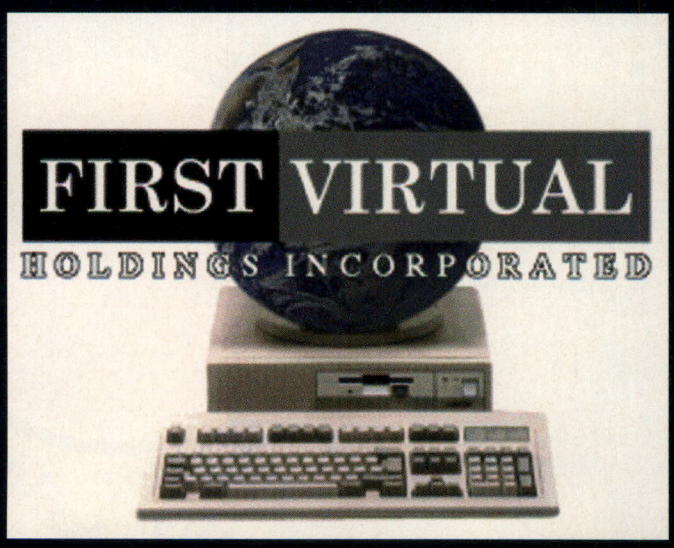
MONEY MATTERS

The current crack-down on credit card fraud means the Internet now offers you financial security, as **Paul Lavin** *reports*

The commercial possibilities for the Internet are limitless if only there was a safe wired way to pay for whatever it is that has you metaphorically reaching for your wallet. Never fear, though, because a lot of bright people are working to close the loop so that the Internet can become the shopping mall of the future. Whether this is a development that will be universally welcomed remains to be seen, however.

A number of sales operations are already at work on the Internet. A good example is the Future Fantasy Bookshop. You use the World Wide Web to browse its considerable catalogue of old, new and not-yet-released book titles (http://www.commerce.digital.com/palo-alto/FutureFantasy/home.html) and, after you find what you want, it's as easy as filling in a browser form to send off an email order.

But you haven't bought anything yet because, in common with other 21st century mall merchants, the Future Fantasy Bookshop doesn't want to take your credit card details over the Internet due to the potential problem of eavesdroppers taking your number and misusing it. After all, financial information can be filtered out with any number of easy and cheap to obtain TCP/IP traffic monitors. Instead, the bookshop requires you to snail mail a cheque or fax your credit card details.



However, despite the hype surrounding fraud on the Internet, it is difficult to judge the actual level of this type of activity at the present time.

Hesitation on the part of buyers and sellers means that some additional form of communication by fax, telephone call or letter is necessary before consummating a transaction. And from the merchant's side this all drives up the cost of doing business and provides an obstacle that deters impulse buyers.

While none of this order-processing is too onerous for a couple of books from the Future Fantasy Bookshop, that reduction in the spontaneity of a sale hurts. Students of retail psychology know that when punters want to buy, you take their money as nicely and quickly as possible before they change their mind.

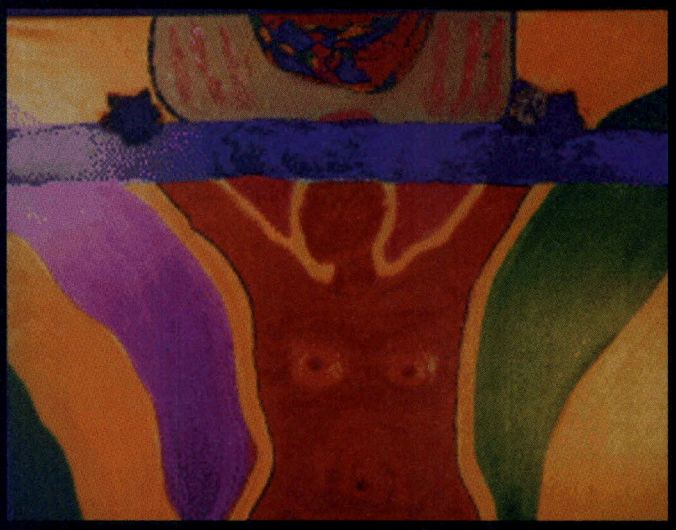
LOOKING AFTER THE PENNIES

The Internet presents shoppers and resellers with new opportunities and new problems. Selling information or software on the Net could be big business for information providers but regular credit card charges are too dear for a deluge of anticipated micro-transactions.

Imagine if you wanted to access a collection of my previous published work or, perhaps more likely, a *Which?* dishwasher evaluation. That information could be worth perhaps 20p per article. If thousands of shoppers 'bought' there would be a good return for the author or publisher but even if a credit card transaction costs £1, that makes micro-information too dear for widespread sales.

First Virtual Holdings has brought together EDS (Electronic Data Systems - a division of General Motors) and First USA Merchant Services, a rapidly growing US credit card company, and has created a fast, efficient way to buy information on line. Unlike other Internet payment systems, FVH is focusing only on buying information available on line; sellers of offlines goods or services are not in the FVH game plan for the moment.

Spending money has never been easier! Check out http://www.fv.com. You don't have to buy any new hardware or software or use



Acrylic on line: http.//www.infohaus.com/access/by-seller/Art_and_Designs/HIDDEN.dreamscape.free.html

any encryption at all. It works from anywhere – whether you are spending pounds, drachma or dollars.

First you have to register and provide a credit card number (off line). When an Internet shopper finds an article or piece of software they wish to purchase, they request the item quoting their FVH account number. The buyer gets to download the material as soon as FVH verifies the account number for the vendor.

FVH then sends an email message to the buyer, who responds in one of three ways: yes, no or fraud. FVH will not debit the buyer's account until it has had confirmation. Abuse by buyers that repeatedly receive information and decline to pay will result in account closure.

While a positive step, FVH's transactions may not be micro- enough. Sellers pay a fee of US$0.29 plus 2% for each transaction. They also pay a US$1 processing fee when payments are made to their account. This is fine for a tenner's worth of software or a book but no where near small enough for the snow storm of penny transactions that may revolutionise the information economy.

FVH is pushing the boat out with some 'virtual' shop space called the First Virtual Infohaus, effectively renting retail space on their system's hard disks. They have a mere handful of merchants up and running (among them a bookstore) but now that they have fulfilled their technical foundations, they are eagerly seeking additional merchants. Email FVH at info@fv.com

COMPANIES CASH IN

Anonymity, an often appreciated attribute of foldable money, is the strong suit of DigiCash, another electronic money hopeful. At the World Wide Web conference held late last year. it launched a global trial of its ecash (electronic cash) system. Ecash allows you to 'click and pay' via your Web browser and is available free from the FTP server at http://digicash.com/

Ecash provides more than impulse purchasing power. Like real paper money, it is anonymous, allaying the fears of users who don't want their transactions monitored by electronic marketing junk email programs or Big Brother. Ecash also offers the same security as cash for both the buyer and seller.

The software for both paying and receiving payment is free of charge but the card companies will still take their cut. However, every transaction is for a specific amount of money and only good once – you don't have to worry about being ripped off, now or a couple of months down the line.

DigiCash, which can be reached via email on info@digicash.nl, has released the first electronic bank notes in circulation, one million cyberbucks, and expects the system to enter full commercial use this year.

Yet another brand of Internet lucre, the Cybercash payment system, simply seeks to leverage current credit card systems by adding security. Cybercash involves users running a free program on their computer that encrypts their ordinary credit card number so that it will be safe from Net fraudsters. This adds a sense of security to the convenience of using a payment system that is already familiar.

However, Cybercash is still much too expensive for micro-transactions and lacks the anonymity of DigiCash. Besides, Microsoft and Netscape, along with Visa and Mastercard respectively, will soon have this angle covered. The Web site is at http://cybercash.com and for email contact info@cybercash.com

A European Union Esprit project called CAFE (Conditional Access For Europe) is attempting to develop the equivalent of an electronic wallet for use within Europe. The project is examining the use of smart cards and existing personal digital assistants to create a secure form of electronic money for use both online and off. Along with DigiCash, ICL, Bull and Siemens Nixdorf have their noses in this particular Euro feedbag.

THAT'LL DO NICELY

However, leading the field is the hottest new Web browser, Netscape's Navigator, which is equipped with a security extension which is perfect for exchanging confidential details, including credit card numbers.

The security check boxes in the Netscape set-up dictate whether or not you receive a dialogue box notification when entering or leaving a secure document space or submitting a Web form with an insecure submit process. If a check box is ticked, Netscape's notification dialogue can be issued; otherwise, the dialogue is bypassed.

Netscape is giving away Navigator but hopes to sell expensive server software for the other end of Net transactions. Its Netsite server line includes the Netsite Commerce Server with integrated security as well as the Netsite Communications Server. The two products incorporate Netscape's Secure Sockets Layer (SSL), based on RSA Data Security technology.

This is the first secure server software available for Internet use and Netscape has published the specification, in true open Internet style, so that other software client developers can use it on the client side for mercantile transactions.

Using the Netscape Navigator forms submission, your credit card numbers are safe. However, you must still be willing to trust the server operator with your credit card number before you enter into a financial transaction because he or she will be able to do whatever they want once they have access to your credit card number and your recourse is limited, just as it is on the phone.

At present only Netscape's browser supports the SSL security protocol. However, the specification for the underlying security protocol has been placed in the public domain and anyone can look at the specification and write their own applications. The Web site is at http://home.mcom.com/MCOM/products_docs/index.html and the email address is info@mcom.com

AND ALONG COMES BILLIONAIRE BILL

No global need could go unaddressed by everyone's favourite global software company, Microsoft. By the end of this year, any Windows user will be able to make secure credit card purchases over the Internet using security software being developed jointly by Microsoft and Visa International.

Like Netscape Navigator, the new Windows secure transaction system will use RSA Data Security encryption technology so that you'll have the same degree of credit card transaction security as you do with other payment methods.

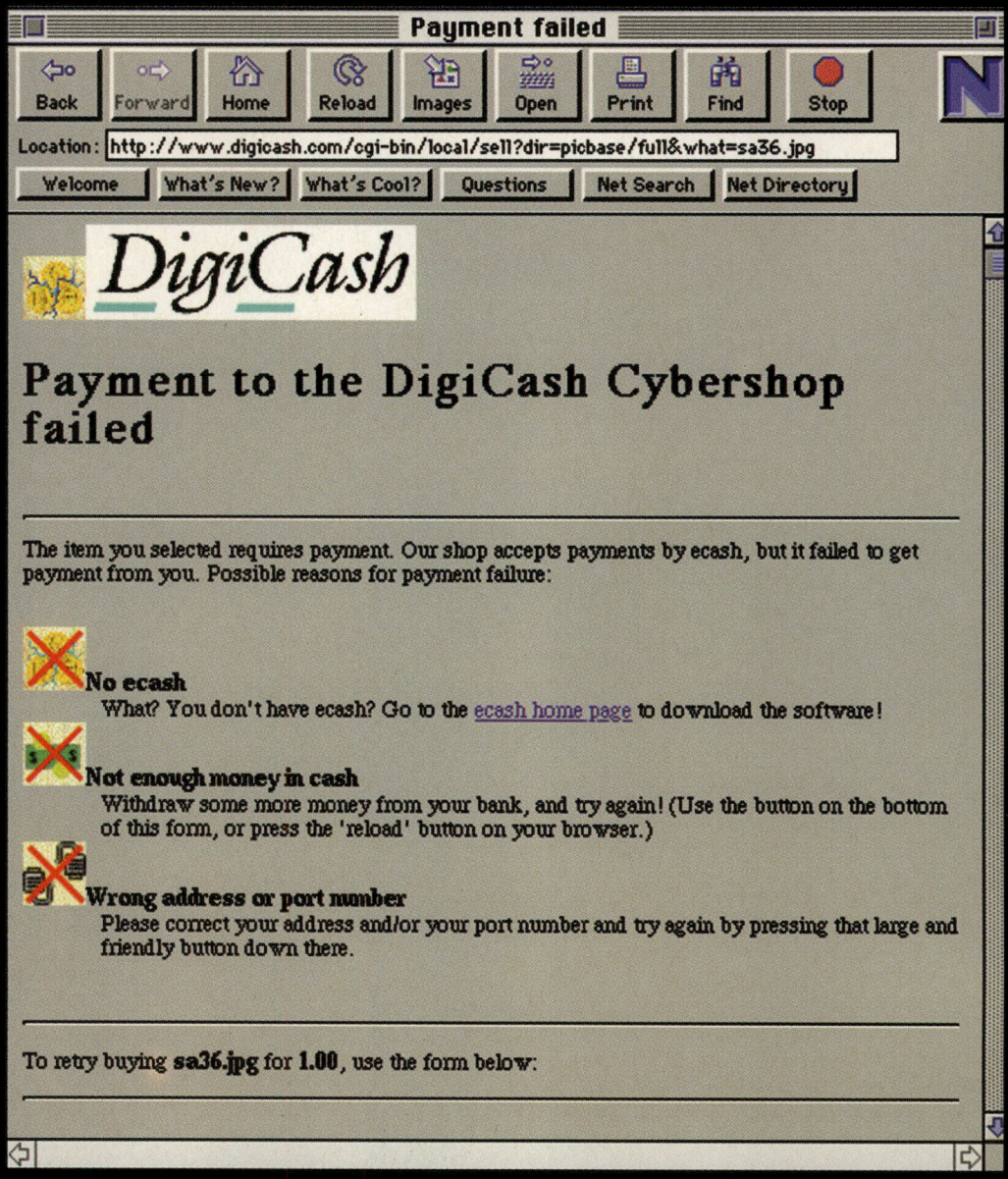
As the source of the world's most popular client software, Microsoft is in a good position to drive this financial development. With over 350 million card holders on the planet, Visa is in a pretty good spot, too, for laying down a transactional standard.

The software will interface with Visa's VisaNet payment system to authenticate buyers and sellers and to ensure transaction security, and it will be similar to an OLE application, allowing it to work in conjunction with other OLE-compliant applications like spreadsheets, personal finance packages or email.

Microsoft and Visa will do their best to remove transactional hurdles. Users will be able to make secure payment from within Windows applications by clicking an appropriate icon and then typing in their card number.

Plans have been mooted to put swipe card readers into PCs but this will take a long time to filter out to a significant portion of the user base. This is also doomed to be one of those developments that takes off first in the States and only later here.

The Internet is big on standards but also big on 'open' standards. Microsoft has committed to publishing its security specification so that any software vendor or card system can play along, presumably paying a tithe to Microsoft in the process. Still, some analysts and competitors are wary about the impact of two such major players on the market. However, Microsoft is starting from behind with the Netscape, FVH, MasterCard and DigiCash systems already up and running. The Microsoft Web site is www.microsoft.com and for Visa the address is www.visa.com/visa/


Payment failed
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Forward
Home
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Images
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Print
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What's New?
What's Cool?
Questions
Net Search
Net Directory
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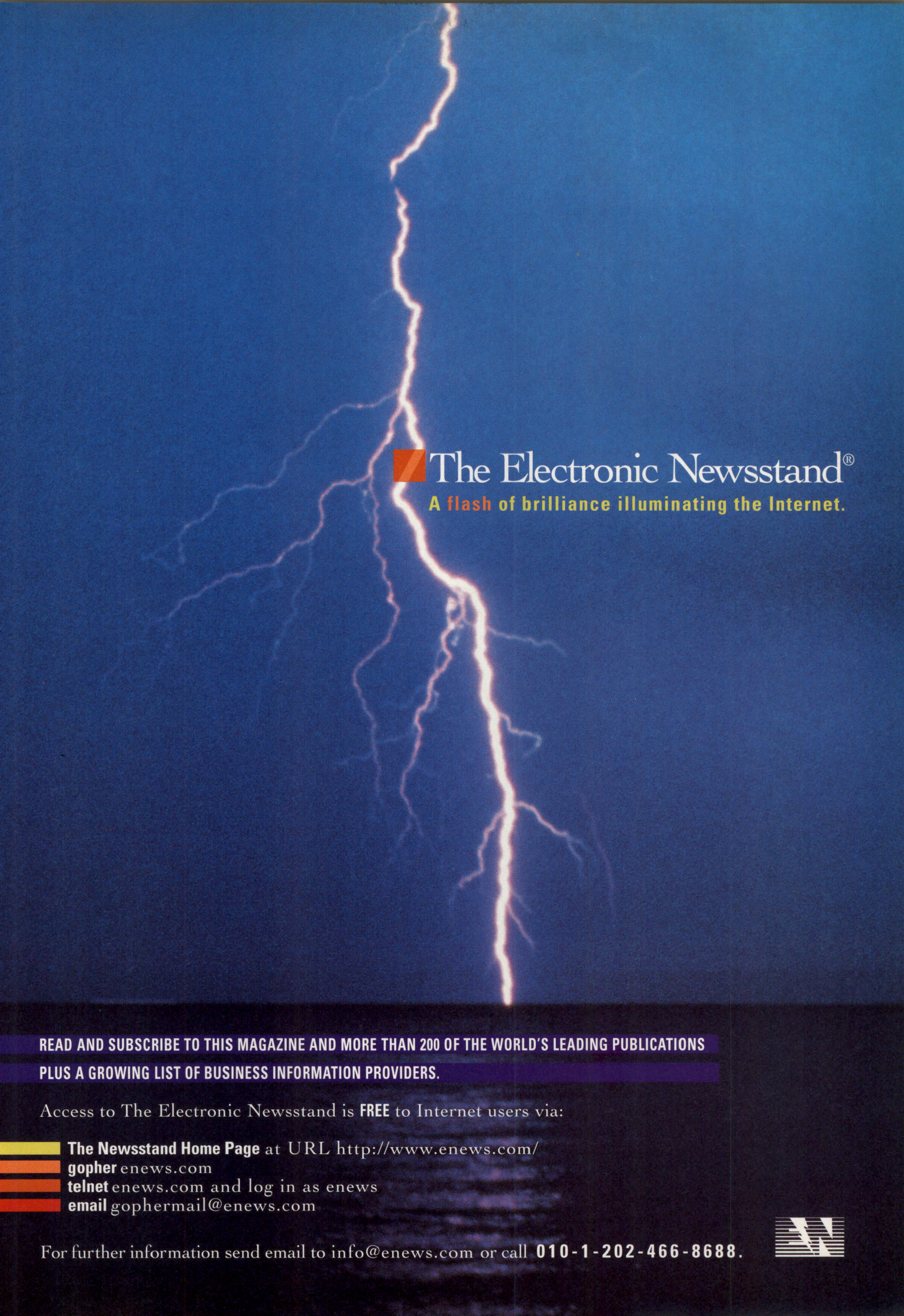
THE BOTTOM LINE

It is not clear which Internet payment system will win out but the backers of each one are making it clear that provisions are being made to ensure that any electronic payment will move money.

However, it will take a global organisation and a mega marketing spend for a 'win'. I suppose that means the Microsoft/Visa effort is the one to watch, unless cash, like anonymity, becomes important, in which case DigiCash has the lead.<ends>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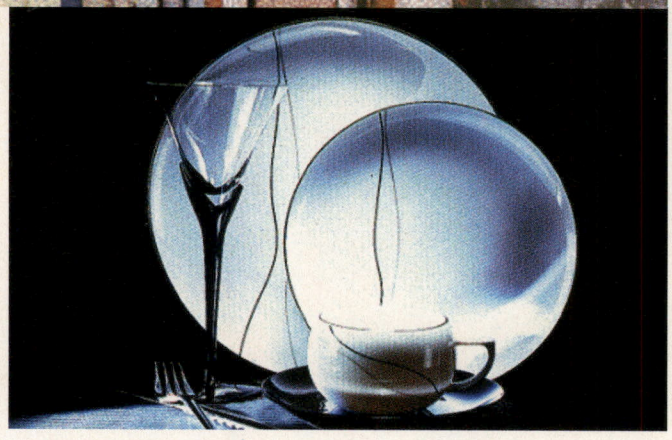
SHOPPING

SOMETHING FOR THE DOG WITH EVERYTHING

Jim Hayes takes his wallet and his pet Fido shopping on the Internet



Top: Paw print fabrics from Gifts for Dog Lovers at http://www.onramp.net/imagemaker
Above: Posh plates from china & Crystal GiftNet at http://www.netmarket.com

The viability of the Internet as a selling medium has recently improved and financial transactions over it are becoming easier and more routine. In January its credibility received a boost when Barclaycard became the first credit card company to offer services on the Internet, although there are no plans to offer payment services via the Net until a secure method of electronic fund transfer is available.

A recent report by US analyst Killen & Associates predicted that money transmission via the Net will grow to in excess of £30 billion by 2005; and certainly the security risks involved in buying electronically are not deterring cybershoppers the world over from indulging their passions. Already a number of niche merchandising areas have emerged and it's clear that purveyors of the quirky and quixotic see the Net as an obvious window for their wares.

Indeed, gifts for the-person-who-has-everything could easily develop into one of the Net's biggest pulls, especially for devotees of the wild, the weird and the wacky. The trick is knowing where to find it, as the off-beat often lurks deep within more standard fare.

A good place to start is at one of the broad-based commercial centres, such as Downtown Anywhere or Tag Online Mall. Downtown Anywhere at http://www.awa.com contains a cybermall as part of a 'virtual city, with a real economy'. Its Main Street is described as 'the commercial centre of Downtown Anywhere', but this eclectic assemblage is still some way off a true cybermall. Stalwarts like booksellers, software and CD stores jostle for business alongside more arcane enterprises such as Internet training and product providers – and a purveyor of ergonomic workstation chairs.

Shop titles can be misleading. Capt'n Mike's Tackle Towne is not a gay contact forum, but a fishing gear store, where along with the regular quota of fishing paraphernalia, you can buy 'classic' videos, including the torching *A Tribute to Tuna*.

A visit to DA's Main Street is incomplete without popping in to the Five and Dime, where (alas) a server error prevented a closer glimpse of The Patti Scrubber, 'the washboard for the 21st century'. Skiffle may never sound the same again.

Downtown Anywhere has a Byzantine payment process, including real-time credit card and voucher processing services that enable you to add value to a Downtown Anywhere account by transferring funds in the manner of an automated teller machine. Spendthrifts may be deterred by this complexity, but many stores have a much more straightforward method of payment that simply involves punching in your name, address and credit card details, which is what the impulse purchaser likes.

Glass Wings at http://www.aus.xanadu.com/GlassWings/welcome.html is another offering containing an arcade, but it has a pulpier, frothier feel than Downtown Anywhere. One of the more famous shops here is Myers' Gourmet Popcorn. Flavours include Honey-Onion-Mustard and Black Cherry ('All the flavour without the cherry pit!').

Probably the most tempting location for the all-round cybershopper is the Tag Online Mall at http://www.tagsys.com:80/index.html. This is a good place for video buffs seeking to plug gaps in their rarities collection. Best Video has over 24,000 titles, including hard-to-find and cult titles. Almost next door is Picture Palace, which pedals a world-wide range of adventurous film experiences, from South American surrealist horror to Hindu mythology set to music. These shops promise the moon but have limitations. Neither, sadly, was able to help me track down two rarities I've been trying to find for years: the ill-fated 1981 remake of Andy Warhol's *Sleep*, starring cult actor Tad Prine (who a week into shooting was found to be an insomniac); and the 1968 adaptation of the Victorian erotic classic *My Secret Wife*, said to mark *On The Buses*' Anna Karen's (uncredited) big screen debut.

GIFTS WITH KNOBS ON

It's never too early to start shopping for Christmas and when it comes to offbeat stocking fillers, there is one site that stands out a mile. Penises of the Animal Kingdom (from the Scientific Novelty Co, still at the Tag Online Mall) is a comparative anatomy chart that depicts the male copulatory organs of several animals, from man (with a big M) to whale. The poster features the fingerlike appendage of the porpoise, the extended urethra of the giraffe, and many other genitological oddities. In addition, an insert of descriptive text is included with the chart to complement the graphics.

Penises of the Animal Kingdom is suitable for framing, and over 20,000 copies have been sold – 'If you are looking for a unique educational resource, a distinctive decoration for home or office, or a novel gift for someone who seems to have everything, Penises of the Animal Kingdom is for you!'

Continuing in a throbbing vein, Condom Country at http://www.ag.com/Condom/Country proves necessity is no barrier to invention. Its claim to being the largest assortment of condoms on the Web may be stretching the point a bit, but its online catalogue is essential viewing for the aficionados of Internet arcania. Condom Country showcases brand names that may be unfamiliar to UK consumers, but will open new vistas of prophylactic pursuit, and, like Penises of the Animal Kingdom, it serves as a unique educational resource (do you know what a 'reservoir tip' is, for instance?).

Many of the novelty johnnies are passé – luminous and flavoured ones - but there are some new twists on the old theme. Take, for example, the Trojan Ultratexture variety – 'textured with a spiral on the outside for her pleasure and microdots on the inside for his'. Presumably, you could turn it inside out for a whole new dimension on sanitised sensuality (my idea and not recommended by the manufacturers).

'There ain't no better way to pick-up some goodies for yourself or your luved [sic] one than from the privacy of yur computer screen,' assures the iconographic Prophylactic Pete. Condom Country is ultra-sensitive on the question of privacy and enables payment via PGP Encrypted Mail for the bashful or via online or telephone for the couldn't-give-a-monkeys.

BLASTS FROM THE PAST

The popularity of TV's *Antiques Roadshow* has left many people wondering if they are sitting on something that someone might be willing to pay for, but so far the collectibles market has been poorly served on the Net. However, a recent recruit from the high-end antiquities world is the Astarte Gallery at http://www.icl.co.uk/Astarte/. This London-based operation specialising in classical clutter has just opened up shop on the Internet, offering a range of antiquities from Egypt, Greece, the Far East and Western Asia – a sample selection of which are catalogued on its Web pages.

Now, a pre-dynastic Badavaruian pottery jar (£450) or a falcon mummy (£950) may stretch your pocket, but the gallery says it carries items for as little as £10. Wee pictures accompany the descriptions. However, you cannot actually place an order via the Net.

HOW MUCH IS THAT, DOGGY?

ImageMaker's Gifts for Dog Lovers at http://www.onramp.net/imagemaker offers a selection of pooch pressies for the doggy minded, such as quilts and boxer shorts printed with canine motifs. However, you can also buy gifts for your dog itself, including scarves and T-shirts. Alas, the range does not extend to what some might consider a dog's real needs, given the personal hygiene problems many wrestle with. Surely it can't be long before Gifts for Dog Lovers adds a new range of pets' toiletries. Again, online ordering is straightforward.

Online florists proliferate, with most malls offering some sort of flowers-by-wire service – possibly because surfers are so tied to their screen they keep missing dates, weddings, funerals etc. A big plus is that when you suddenly remember – at 3am – that you stood someone up, you can dispatch your apologetic bouquet without leaving your bed.

Netmarket at http://www.netmarket.com has 800-the-Rose, with an interactive flower catalogue containing roses, potted plants, fancy displays and all manner of designer flora. Meanwhile, MarketNet at http://mkn.co.uk is where to find FlowerNet. Despite a fuss-free order form (which accepts four major credit cards), no visuals are available and visitors may balk at paying £9.90 for a single rose in a container sight unseen, especially compared to the exotic flowers available from Kaua'i Exotix, to be found on the Netsurfer Marketplace at http://www.netsurf.com/nsm/latest.mktplace.html. Here you can order bouquets gathered from the foothills of Mount Waialeale ('the wettest spot on earth') on the Island of Kaua'i. At $39 a bunch (including shipping and handling), foothill-to-door, as it were, it sounds like good value – if you're in the US.

The Netmarket Company promises over 250,000 consumer products from Shopper's Advantage – coming soon. In the meantime, shoppers can content themselves with a choice of crockery from the China & Crystal GiftNet or CDs from Noteworthy Music.

Sites like these will proliferate if demand is there. And the demand is dependent on, whether, having placed an order and seen your credit card debited, the item you paid for actually turns up. So, next month, **INTERNET** will test billing systems by placing orders for over £2000 worth of goods (expense accounts allowing), and we'll let you know if any of the merchandise actually arrives as promised. <ends>

Jim Hayes is editor of Datacom and a trustee of Cybershopaholics Anonymous.

Above: Look but don't touch – ancient antiquities from Astarte Gallery at http://www.icl.co.uk/Astarte/

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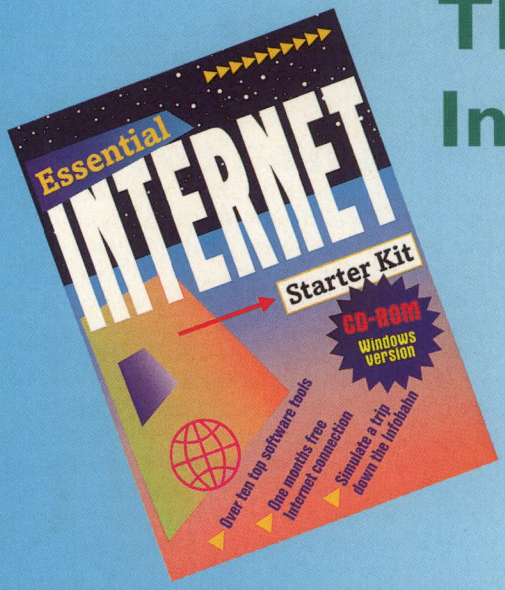

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Attitude problem

PAUL LAVIN

writes...

The big boys are arriving on the Internet scene and, to be honest, it smacks of me-too-ism. In fact, call me a cynic, but I am just a little suspicious of the gifts they bear and what they will want in return.

The recent launch of BTNet and Microsoft's purchase of a chunk of Uunet, the big US Internet provider, have given pause for thought. While these two worthy companies are trumpeting the benefits that they will deliver to the Internet community, I am not entirely certain that their belated enthusiasm is going to be great and groovy for everyone online.

With the popular ground swell from individuals, academics and businesses, the brighter minds in the computing and telecommunications world can hear the tills ringing in the distance. The Internet community has gone from zero million to the oft-quoted 30 million in an incredibly short time. Present users of the Internet (and their friends and co-workers that have yet to join) have a vested interest in making sure the Internet continues to fulfil the function that attracted them in the first place. I am concerned about what the big boys are going to bring to the party to justify what they take away.

While BT could drive access prices down, it could also drive the other providers out of business

BT is concentrating, at least initially, on a premium priced and featured Internet service. With a dedicated modem per customer, the users that pay (and pay and pay) for BTNet will never have to deal with those annoying engaged tones that confront all of us who use services like Demon or PC User Group.

One thing BT is in a better position to deliver than any of the other current Internet providers is a very wide, inexpensive service. BT can work with economies of scale that dwarf the considerable success our current fleet of providers have had. But BT has Oftel looking over its shoulder.

While BT could drive access prices down, it could also drive the other providers out of business. No stranger to the monopoly position, I am sure that BT would do what it could to maximise the return for its shareholders. This is one reason why Oftel and the government have to keep a watchful eye on BT's Internet adventure.

Another reason has to do with the kind of mistakes that big organisations make. In large organisations there is a certain amount of organisational inertia, not to mention hubris. These two characteristics combine to make Internet service provision by the likes of BT and Microsoft a less than optimum solution for a large and varied audience of Internet users.

BT's response when I asked how they would feel when they are accused of being a provider of pornography to minors, a disseminator of blasphemy and a deliverer of bomb-making techniques to anarchists was: "We will positively vet all material made available from BT's servers."

Come on! Who is kidding who? It is an inescapable fact that a large amount of Internet traffic, especially the **alt** hierarchy of the Usenet news groups, is concerned with sex, drugs and rock 'n' roll, not to mention religious debate and assorted oddments for the radical community. There's something like 80Mb a day coming in to the Usenet and the growth curve is something else. How many BT minions will it take to carefully comb out every offensive word and uudecode and view every suspected naughty bitmap? Can it really do that and provide a competitive service in terms of both cost and coverage? And if it could, would we want it to? If BT plans to protect the sensitive cyber surfers from the contents of **alt.binaries.pictures.erotica**, then that is a potentially serious censorship issue.

Microsoft is a slightly different matter, if only in degree, not kind. Its Internet position is paraphrased best by that seminal Zappa album of the 1970s: *We Are Only In It For The Money*. But Microsoft, too, has been accused of anti-competitive practices and the legal battles about that are still far from over on the other side of the Atlantic.

Having a button on every NT or Windows 95 desktop that took you directly to the Microsoft Network would bring a great influx of users in, and that's a good thing, because I heartily believe that the value of the Internet increases as the number and variety of participants increases. However, I am not sure that I want Microsoft as the gatekeeper to the world's information 10 years hence. It is smart enough and ambitious enough to do just that and I don't think it should be allowed to.

I guess the unease I feel about the arrival of the big boys is one of the fundamental issues facing the Internet: who is running this show? Clearly the commercialisation of the Internet will lead to profit maximisation and, while this is not an alien concept to me, it is a new phase for the Internet.

Traditionally, large groups of people have looked to governments to organise those things that they couldn't efficiently or practically sort out for themselves. The only thing that makes me more nervous than the big corporates' interest in the Internet would be the government jumping in with both left feet. As Pipex' Peter Dawe recently pointed out, off-shore data havens are a coming tax avoidance strategy and we all know how protective the government is about its revenue sources. We would all rue it if the Government became involved in the development of the Internet. <ends>

Paul Lavin is editor of Info Highway.

HOW TO G
in adv

The message may not be well-received in some quarters but understanding the complex marketing tool. In an exclusive extract from his new book, **Michael Strangelove** *explains*

Doubling in size every year, the Internet has dropped out of the sky like a bomb and exploded onto the scene of popular culture. Mass media has not shown such a prolonged and intense fascination with a new technology since the introduction of the personal computer over a decade ago. This is the first technology of its kind to achieve global scope.

The first thing the business community desperately needs to know about the Net is not how to use it, but how to comprehend it. What, indeed, is the Internet? Any effective advertising and marketing will be built on the basis of a correct understanding of the Net and its implications. The Internet is a technology, a culture and a tool. Each of these aspects needs to be understood to properly comprehend the Internet and its role in the development of cyberspace.

The Internet is a distributed and open systems technology. 'Distributed' means that it has no central location and 'open' refers to the fact that the operating codes are not proprietary. Everyone can contribute to the design and development of the overall system.

One of the great historical ironies is that the Internet arose out of a Dr Strangelovean plan to create a communications system that could survive a nuclear holocaust. What was to have been a communications system for the surviving elite of a military/industrial complex has mutated into a subversive neo-democratic (more precisely, anarchistic) cyberculture.

The Internet community is content-oriented, whereas most advertisers deal in style, metaphor, image and hype.

The unique technological character of the Internet has endowed it with a fundamentally subversive nature. Over the past 25 years of its growth, the Internet has demonstrated that it is not subject to privatisation, centralisation or control. This situates it in direct opposition to the historical dynamics of capitalism and commercialisation. The unique technological architecture of the Net has generated an equally unique cultural force that defies present economic relationships.

Many advertisers will fail in their initial attempt at Internet-facilitated advertising. This is not at all surprising in light of the fact that most advertising in any medium is woefully ineffective, mind-bogglingly boring and uncreative at best - deceptive, manipulative and annoying at worst.

Remember, today's Internet arose out of a non-commercial environment. Be forewarned – the Internet is not television, not a fax machine, not the post office, and certainly not yours to do with as you please. The Internet has guardians within.

So, is advertising on the Net new?

Even among long-time Internet users, a perception exists that Internet advertising is a new phenomenon. It is not. In the mid-1980s, when the Internet was largley an academic, scientific and technical community, commercial activity was allowed if it was in support of research efforts. This meant that right from its beginning, software developers, publishers, consultants and technicians hawked their wares on the Net.

Now an Internet address on business cards is the latest craze. As the Internet is not owned by any one company or nation, the only real restrictions placed upon users arise from the consensus of the virtual community itself.

IS UNSOLICITED ADVERTISING PERMITTED?

Although it is the worst thing a business could possibly do on the Net, unsolicited advertising does indeed take place every day. One company even sells access to over a million Internet addresses for direct email advertising. Nothing stops you from sending unsolicited commercial email on the Internet, but if you send out 1000 advertisements, be prepared to recieve 100,000 complaints. Companies disregarding Internet users' wishes are likely to find this community, like any 'oral' culture has a long memory and is quite capable of anti-advertising campaigns and boycotts.

On the Internet, the most basic relationship between programming, content and advertising is absent. So far, the Internet is the first form of mass communication to arise without advertising sponsorship. In cyberspace, content is uncontrolled and the challenge facing the business community is to adapt to this new medium and the emerging paradigm.

The Internet delivers an audience for vertical marketing of highly customised products to micro-communities in a cost-efficient manner not previously available to retailers. One of the effects of the integration of the Net into the business community will be the rapid growth of low-volume products marketed to small global groups.

CAN I SEND AN AD TO EVERY INTERNET USER?

To send an email message to all 30 million Internet members would take 17 days, transmitting at the fastest speed available. Doing so would also bring down your provider's system rather

ET AHEAD

ertising

culture of the Internet is central to using it as an effective
the rules of the game for advertising on the Net

The surest way to build your business through the Internet is to engage in online conferences

quickly. If sent slowly, the same number of messages at a safer pace of 20 per minute would take 34 years to complete.

The surest way to build your business through the Internet is to engage online conference members in conversation. Be ready to answer questions and participate in group discussions. Regularly contributing helpful answers and well written thoughtful comments will quickly establish you as an expert. Another advantage to being a prolific poster is you develop name recognition.

The Internet is content-oriented, whereas most advertisers deal in style, metaphor, image and hype. Traditional advertising copy does not go down well. The Internet community appreciates quality, value-added information, so find a way to add value to your message. Embed it within a commentary on industry trends, create an electronic newsletter that provides a range of related data or enter into dialogue about surrounding issues. Nothing is more obvious in ASCII than empty hype.

ADVERTISING'S REAL NATURE

Power, advertising and the Internet are all inescapably related. Traditional advertising is not merely a matter of paying to disseminate a message. Often overlooked is the issue of what messages advertising serves to exclude from media. Advertising is a multi-billion dollar industry that underwrites all major forms of mass communication. This endows advertising with substantial power. Without question, the financial dependency created by the relationship between advertising and mass media functions as a control over the overall content of the media it has supported.

The ad industry continues to deny that it influences content and most editors and publishers naturally deny editorial interference from sponsors. Listening to the industry constantly deny this incestuous relationship is like hearing the tobacco industry repeatedly trying to convince a congressional hearing that cigarettes are not harmful. Yet the past 30 years of communication studies have produced a small mountain of evidence which demonstrates that the mass media is constantly subject to the influence and bias of its primary commercial sponsors. These myths have been necessary to gain trust and to maintain the appearance of legitimacy.

PROFITING FROM ANARCHY

The advertising industry is on the verge of being shattered into a thousand fragments due to the knowledge explosion and the proliferation of new technologies. Grand theories no longer hold sway over the entire industry. Central theories, techniques or laws can no longer be relied upon for commercial success. All the familiar categories of Madison Avenue have been destroyed by the post-modern marketplace.

Regardless of the anarchistic cyberspace environment, the news is not all bad for traditional businesses. As a tool, the Net does present unparalleled opportunities for effective advertising.

Take the narrow-casting feature of the magazine industry, which is characterised by its ability to deliver an affinity group and fragment it to the point of infinity; one now has a metaphor for the future of the Internet: the cost-effective delivery of niche markets to the business community.

The Internet is the single most significant new tool for business, particularly for small to medium-sized enterprises. What makes the Internet such a powerful tool for the world of the small business and the entrepreneur is that it provides both with the ability to communicate with a global audience that already numbers tens of millions.

Prior to the integration of the Internet into the cosmology of the collective consciousness, most small businesses only had access to local markets. The advertising costs of previous mass media functioned to limit the growth of most local businesses.

The Internet's historically unique ability to facilitate inexpensive global communication is destined to have a widespread impact on the shape of national and international economies. Take the elitist nature of the past 30 years of multinational corporate economics and extend its power to every small business and you have the democratisation of the global marketplace through cyberspace. This is the meaning of the Internet as an economic paradigm shift.

No company has yet mastered the Internet as an advertising and marketing tool. Expect this to change as today's paradigm begins to shift into the digital, wired information age. <ends>

The contents of How To Advertise on the Internet is available by Gopher at fonorola.net. The hard copy costs $59.50, including international p+p (send international money orders only) from Strangelove Press, 208 Somerset Street East, Suite A, Ottawa, Ontario, K1N 6V2 Canada. Tel: 0101 613 565 0982. Fax: 0101 613 569 4433. Email: Mstrange@fonorola.net

Neighbourhood watch

IVAN POPE

writes...

The original Web pages were text-based – but they had to be because back in the early days browsers couldn't handle images or sound. However, thinking in three dimensions is taking a long time to work through to Web design.

One problem with the Web is that you don't get anything for nothing and in the early days of the Web we got a lot for what we thought was nothing. It's free? And I can get the office junior to learn HTML and a bit of Unix, to whack a few pages together and to look after the site, convert graphics, keep up to speed with new developments and do everything else that he used to do before he became a publisher?

Well, many managers are only now discovering that the office juniors, or students in academia, have put together Web sites with string and sticking plaster. Not only that, but these sites are getting hundreds of thousands of visits a week. Stories abound of major educational institutions where a student put up a Web server at the weekend, aliased the august name of the University to it by appending a www to the usual domain name and, by default, became the global front desk before anyone else in the place even knew the Web existed.

And, to be fair about it, most of these sites were visually dreadful but brilliantly fresh – a hastily scanned college crest or company logo in either two or a million colours and several lines of either tiny (header 6) or huge (header 1) text, challenging 'For the science faculty click here' or 'Some pictures from my recent holiday in Borneo'. This was invariably followed by a huge listing of 'great links'.

In the early days (and I speak of the end of the year before last at best), there was much talk of how complex it was to code up information for this new process, how the World Wide Web would never challenge Gopher due to the complexities of adding HTML to existing documents, whereas Gopher could just be pointed lock, stock and barrel at existing document structures.

Although the systems operators, computer scientists, tinkerers and enthusiasts who built the first Web sites were good at getting some very flaky software running, they tended to construct their sites in a linear fashion, and it really is taking a long time for any sort of three-dimensional thinking to work its way into Web design.

It's very obvious that Web site design calls for a variety of skills: an understanding of HTML; a grasp of what a Web server does; the ability to write; page layout; illustration; design; production management; interface design; and a smattering of Perl and audio-visual conversion along the way. Very few if any individuals have such a huge range of skills, although many seem to think they have, including myself at times (except the Perl).

An obvious step as we start to professionalise Web production is for the existing skills of writers, designers, editors, programmers and others to be brought together for Web projects. Problems soon arise as there is generally no tradition of professionals in these fields having any knowledge at all of what the Web is. Trying to bring designers up to speed during a project, for example, may be an interesting challenge but hardly does much for planning or the budget.

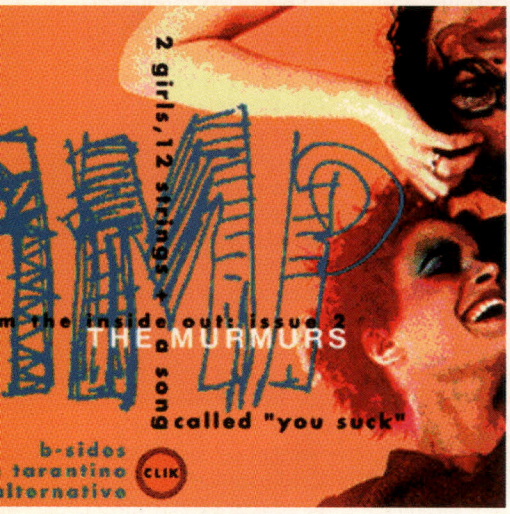
As the Web enters and gets a grip on mainstream thought, we are seeing a lot of people arriving in the field, often thinking that there is a quick buck to be made. While the Web community should welcome these interlopers and offer them all plenty of encouragement as fast as possible, we should also try and ensure that the result is not the replication of 2D practice within our 3D world.

Designers have a problem with the Web: they are used to controlling their output to the nth degree. For them were the point and pica, Pantone colour charts and ten thousand fonts invented. The Web, with its admittedly pathetic range of variables and specifiables, is a designer's nightmare, unless they are willing to step out of an established mindset and let rip a bit.

One of the first things that newbies to the Web learn is that it takes a while for certain pages to arrive. They complain about this and waver for a moment, feeling that this thing isn't all its cracked up to be. Then, with a few clicks of the mouse, they're off on that endless cruise that is known in the trade as page burn.

Although it is not often acknowleged verbally, the Web works because of the breadth and depth, the huge endless swath of potential travels, the endless inventiveness of it all. Single pages and single sites are often not very good at all. Time can be wasted, lost in trivia or wallowing in verbiage but, in the end, it's the travelling hopefully that does it, not the arriving.

Web designers and those who aspire to design the perfect site can learn from this. A few simple rules of thumb may suffice for starters. Don't overcrowd. Pages that arrive quickly with a reasonable point to them are a pleasure; Pages that start off with a list of links before the point of the page invite an

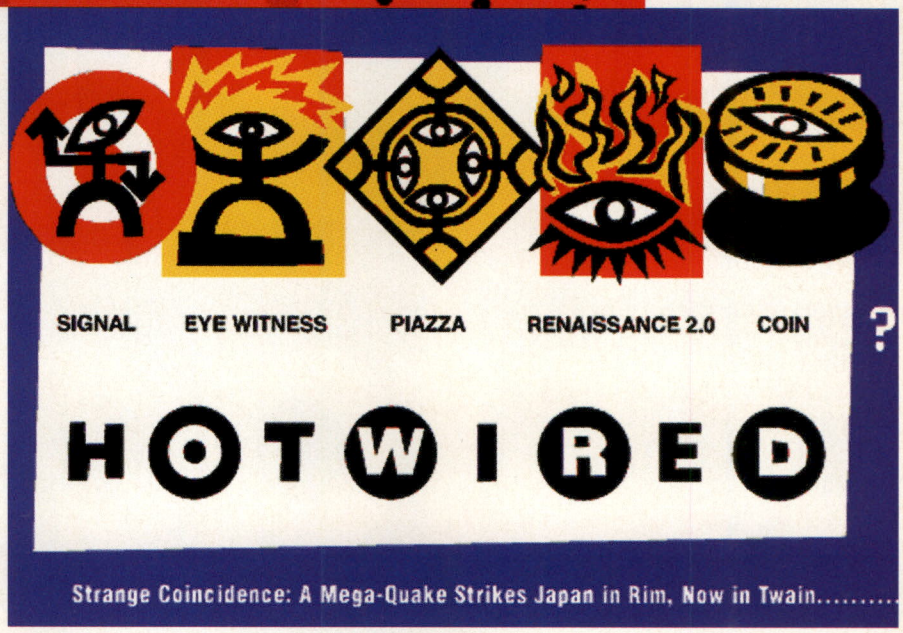


The MCA Records' site (http://www.mca.com/mca_records/index.html) works visually but the effect is still 2D rather than 3D

feedback F letters to the edit
next N forthcoming noise
flicks F soundtrack scoop
loot L get alternative
seven 7 LP's you'd want
archive A bios to back issue
vault V an excess of riche
arena A the chat room
noise N the latest action
YOU SUCK

Left: A striking image from MCA Records (http://www.mca.com/mca_records/index.html

Below: Hotwired (http://www.hotwired.com/**) looks great but navigating your way around can be difficult**



It's very obvious that Web site design calls for a variety of skills...Very few individuals have the full range

early exit. There's nothing worse than having to guess what the links are or why you might want to choose them, so make it obvious. Also, within a site, orientation is a major issue, and size does matter: huge mapped images are seldom returned to; great gobbets of text ditto.

Some Web ups and downs

AMP Magazine, from MCA Records at http://www.mca.com/mca_records/index.html is a rather beautiful page which starts with a 56k graphic. You get a text option to the contents, which is essential for those of us who cruise with the images turned off, though this is getting a bit like watching television with the picture turned down. The site works because it thinks of itself as a magazine, but it doesn't really go beyond 2D thinking.

Hotwired at http://www.hotwired.com/ has set a lot of standards for others to aspire to. Its integration of form and content is experimental to a large degree, but time and effort has been taken to think about what a Web site should be. My main problem with it is that there are very few clues as to what is what. The only way to find out is to spend some time visiting them – and time is money on the Internet.

Grammercy Press – go to http://www.mci.com/ – goes from the sublime to the ludicrous in one easy movement. Grammercy Press is one of the advertisers on Hotwired. From the first page of its ad you get a sinking feeling. A ream of text headed by some little pictures of identikit staff leads down to a classic 'Click here to visit Grammercy Press' link – though you click on 'Grammercy Press' rather than on 'here'. Wow! Taking this option leads to a picture of a nondescript office building. Clicking on a window leads to information about the people who work there. I'm sure this is fascinating to their mums, but to the rest of us mortals, it's a waste of space. There are some nice touches – clicking on the receptionist's computer leads you to a simulation of MCIMail software, which you can use to send mail to the firm. There are other goodies, too, but most of us will have left the building long before we get there.

FedEx at http://www.fedex.com/cgi-bin/track_it is another ugly site with something clever happening in the background. You can track any parcel you have with FedEx. It's simple, but oh, that graphic. Surely a bit more sophistication and gentleness would do the trick. <ends>

Ivan Pope is the author of Internet UK and a director of Webmedia, a project development company.

Full power
Internet access

Easynet Ecstacy

0171 209 0990
admin@easynet.co.uk

USA today

DANIEL DERN

writes...

Welcome to USA today. In the coming months, we'll be taking a look at the issues, concerns, challenges, problems, myths, misconceptions and other aspects of the intersection between you and the Internet.

Predicting, is fun but not easy, as a simple test shows. Look back over the past year. How much of what happened did anyone predict or anticipate? Consider, for example, the wildfire use of NetScape Communications' next-generation web browser (Mozilla) and how its 'show the text ASAP and then fill graphics' approach redefined how productively we can view and use Web-based multimedia content.

Or who expected the Internet announcements and acquisitions by America OnLine, CompuServe, Prodigy, Microsoft and IBM, or that Walt Disney would put QuickTime movie clips on the Net for downloading, never mind the exponential growth of the Web itself. It was a good bet that most of these folks would do something, but few people anticipated exactly what or when.

So, connecting to **www.crystal.ball.com**, here are some quick predictions: Obviously Mosaic/NetScape-class Internet front-end browsers will take off as you'll soon be hard pressed to buy a computer or operating system that doesn't include a TCP/IP network stack plus a browser that handles Web, Gopher and FTP.

However, I predict, third-party Internetware will stay hot, despite the entrance of Microsoft and IBM to the market. Many users will want to add Internet capability to systems they already own and, although some will opt to buy a single applications suite, others will continue to mix and match commercial shareware, freeware applications and protocol stacks.

Some providers will go out of business as users turn elsewhere for better service for the same or slightly *higher* prices. National/international online services will continue to expand offerings at non-competitive prices.

The banking, credit card and financial services industries will continue to announce 'alliances' to let people place orders, give credit card numbers, etc over the Internet. Most of these will use public-key encryption licensed from RSA Data Security and the RSA-EIT co-operative Terisa product kit.

Sometime during 1995 we'll see (a) a mega- break-in where companies lose valuable data, (b) $100 million in fraudulent credit card charges using 'hijacked' card numbers and (c) all users logging in from some trade show having their passwords compromised.

Usenet Newsgroups, mailing lists and individual email users will continue to be plagued by 'spammers' sending unsolicited messages. We'll see at least one major court case where a spammer tries to sue network system administrators for cancelling a message.

IBM's OS/2 Warp will be hot but reluctance to 'upgrade' to Windows 95 will slow down Microsoft adopters.

The Internet software aftermarket will explode. Also, commercial/corporate applications will converge with Internet capabilities, for example Lotus Notes (client and server), Adobe Acrobat, Microsoft Word (HTML extensions), QuarterDeck HTML editors for MSWord and QuadRalay's GWHIS Web-based annotater.

Internet email terminals in airport lobbies, hotels and libraries and kiosks for browsing Web-based information in public locations such as city halls, libraries and parks will spring up.

As I said, the prediction racket's hard, but a wish list is much easier. Many of the following will be hard to fulfil and I won't be surprised if the predictions rather than the wishes come true in the next year. Still, here goes:

- Internet applications under Windows that don't trash each other's WinSock DLLs and generally coexist peacefully, plus URL-aware programs that let the user click on an Internet address in a item, for example in a Usenet posting, and invoke the appropriate program to access it.
- Accounts set up with menus and default Gopher/Web top-level screens to help new users. An example would be pointers to popular search and index tools, searchable lists of Newsgroups and mailing lists.
- A top-level Internet manager for all my Internet applications and configuration files.
- An Internet Express card independent of my Internet account, that can be used securely and ubiquitously. Don't login without it?
- The option of secure remote login, for instance SecureID cards or S/KEY one-time passwords, plus a 'travellers telnet network' for remote-login to check email for North America and the UK (a la EUnet Traveller).
- Usenet and email facilities that filter junk mail and detect and kill spam.
- User agreements that include financial penalties for network abuse. Ultimately, of course, I'd simply like to see people stop doing these acts, but that's pure fantasy.
- A single, comprehensive, easy to use directory Services, that would let us search based on user name and keyword-matching service type (eg 'used books'). <ends>

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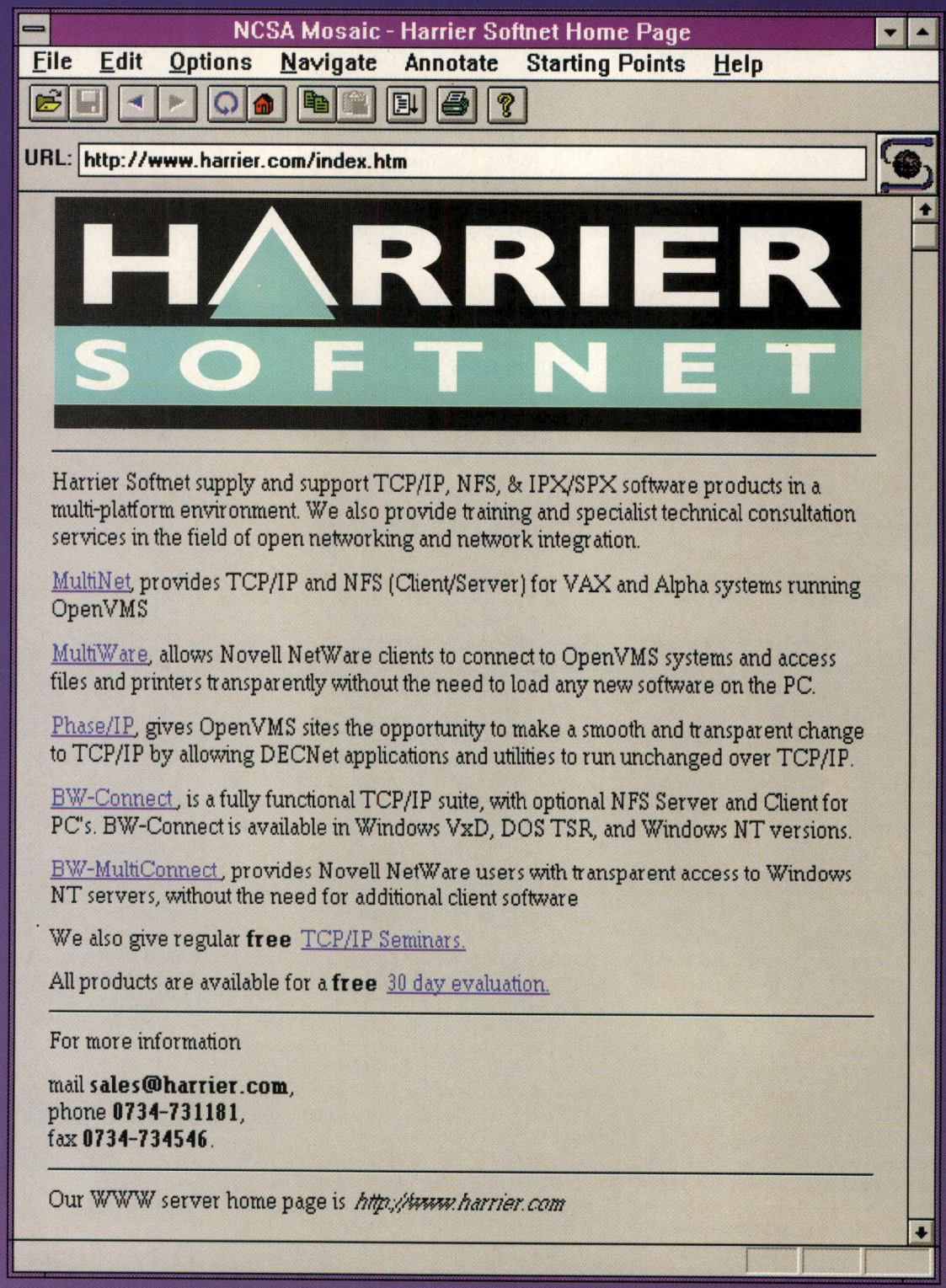
Some providers will go out of business as users turn elsewhere for better service for the same or slightly higher prices


NCSA Mosaic - Harrier Softnet Home Page
File Edit Options Navigate Annotate Starting Points Help
URL: http://www.harrier.com/index.htm
HARRIER
SOFTNET
Harrier Softnet supply and support TCP/IP, NFS, & IPX/SPX software products in a multi-platform environment. We also provide training and specialist technical consultation services in the field of open networking and network integration.
MultiNet, provides TCP/IP and NFS (Client/Server) for VAX and Alpha systems running OpenVMS
MultiWare, allows Novell NetWare clients to connect to OpenVMS systems and access files and printers transparently without the need to load any new software on the PC.
Phase/IP, gives OpenVMS sites the opportunity to make a smooth and transparent change to TCP/IP by allowing DECNet applications and utilities to run unchanged over TCP/IP.
BW-Connect, is a fully functional TCP/IP suite, with optional NFS Server and Client for PC's. BW-Connect is available in Windows VxD, DOS TSR, and Windows NT versions.
BW-MultiConnect, provides Novell NetWare users with transparent access to Windows NT servers, without the need for additional client software
We also give regular free TCP/IP Seminars.
All products are available for a free 30 day evaluation.
For more information
mail sales@harrier.com,
phone 0734-731181,
fax 0734-734546.
Our WWW server home page is http://www.harrier.com

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What's on

What's on

The following pages are the most extensive listing ever published in a magazine, but even so, they still represent just the tip of the iceberg in terms of what's out there. Each day hundreds of new pages appear, old ones disappear, and others relocate to better locations. Cyberspace is a virtual jungle with jewels in the most unexpected places. Seek and ye shall find.

If you have a favourite Internet destination and it's not listed here, email the address, together with what's special about the site, to whats_on@computing.emap.co.uk (subject: new sites). At the time of going to press all addresses had been checked, but things may have changed by the time you try them. Again, do let us know if you discover an entry has moved. Send new details to whats_on@computing.emap.co.uk (subject: new address).

WHAT IT ALL MEANS

Once you are connected to the Internet, all the addresses should be easily accessible via a multitude of common shareware and commercial packages. If you have problems, feel free to email us and we'll try to reply as soon as possible.

WORLD WIDE WEB

The majority of locations listed are World Wide Web pages - those with the http:// prefix. Some sites are highly graphics-intensive, so if you turn off the Load Images option in your Web browser or choose the text-only view, these pages will load faster. This is particularly useful for slow modems. It's possible to access at modem speeds as low as 9600 bps, but we recommend 14,400 bps as the entry level. Carefully enter the full address, eg http://big.fish.net/Blind~Mullet.html, exactly as listed, including capital letters, into the Open Location dialogue box of your Web browser. If you're using Netscape you can leave off the http:// part.

GOPHER

Gophers allow you to search through databases by simply choosing from successive menus. You can access these from your Web browser in the same way as World Wide Web pages, although a dedicated Gopher client can give better results. Unlike Web pages, which can contain links to anywhere on the Net, you will eventually reach the bottom of the tree. Key in everything after the Gopher: prefix. With a Web browser, like Netscape, precede it with gopher://, eg gopher://fetch.com/toothy.

FTP

FTP (file transfer protocol) allows you to download any file from a remote computer onto your own. It may work from your Web browser, but it's much better to use an FTP package such as Winftp, or Fetch. You can access at any speed, but the faster your modem, the quicker the transfer. Key in everything after the FTP: prefix. Depending on your software, you may have to put the path name (all the text after the first single /) in a different dialogue box.

WHERE TO GET SOFTWARE

Here are some common Internet clients and the anonymous FTP servers where you'll find them. Log in with the username: anonymous and use your email address as the password.

MACINTOSH

Purpose	Package	Path
Email	Eudora	ftp.red.net/pub/mac/comms/mail/
FTP	Fetch	ftp.red.net/pub/mac/comms/ftp/
WWW	Netscape/Mosaic	ftp.red.net/pub/mac/comms/www/
Usenet	Nuntius	ftp.red.net/pub/mac/comms/news/
Archie	Anarchie	ftp.red.net/pub/mac/comms/ftp/
Gopher	Turbo Gopher	ftp.cyberspace.com/pub/ppp/mac/gopher
Telnet	Telnet	ftp.cyberspace.com/pub/ppp/mac/telnet

PC

Purpose	Package	Path
Email	Eudora	ftp.red.net/pub/windows/comms/mail/
FTP	Winftp	ftp.cyberspace.com/pub/ppp/windows/ftp
WWW	Netscape/Mosaic	ftp.red.net/pub/windows/comms/
Usenet	Winvn	ftp.cyberspace.com/pub/ppp/windows/newreaders
Archie	WinArchie	ftp.cyberspace.com/pub/ppp/windows/archie
Gopher	WinGopher	ftp.cyberspace.com/pub/ppp/windows/gopher
Telnet	Telnet	ftp.ncsa.uiuc.edu/telnet/dos/

CONNECTION PROBLEMS

So you've resorted to reading the instructions and it still won't work. You've carefully typed in the address three times but keep getting error messages. Don't despair, it happens all the time. There are two basic causes of errors: incorrect addressing and system failure.

Looking at addressing problems first, consider the address as having three parts. Reading from left to right they are: the protocol such as http://, ftp:// or gopher://; the domain name (everything before the first single forward slash); and the file location (everything after and including the first single forward slash).

Netscape is fairly versatile. You don't need to key in the protocol http:// and, depending on your configuration, you can FTP, Gopher, Telnet and access Usenet from the command line. Don't count on it, though, and if you have problems, try using a dedicated program such as Fetch or WinFTP. If they work, but you would prefer to run it all from your Web browser, you may need to tweak your set-up.

Chances are, if you get the error 'unable to locate host', you've keyed in the domain address incorrectly, the address has changed, the host is offline or you have a connection error.

First, verify that you are indeed connected to the Internet by connecting to a known address. If you succeed, you'll know the problem is specific to that address. You could try inserting or removing the WWW. prefix as this is a common address change. If the host is temporarily offline, try later.

If you get errors like '404 file not found', you have successfully logged on to the host computer but the file location you have specified either does not exist, has been entered incorrectly, or has been changed. You'll get this message a lot, but with ingenuity you can still find what you want.

Next, check the capitalisation. If the host has a Unix server, file addresses will be case-sensitive. What's worse, Unix programmers seem to delight in long file addresses filled with capitals, tildes (~) and underscores. After a while, they usually shorten them, thus creating a new location.

There are several ways to find the new location. Try adding or removing the slash (/) at the end of the address or log on to the host domain address (type in everything before the first single backslash) and browse through menus and hotlists. If that doesn't work try omitting the file name and then each subsequent directory up the path.

If you are getting errors such as 'connection refused by host' or things seem unusually slow, this may be a connection failure caused by your software, hardware, connection, line, provider or by heavy traffic.

You will find some servers very difficult to get on to during peak hours and they may even be temporarily offline. Your access provider may be overloaded or you could have a noisy telephone line (don't forget to disable call waiting). In these cases, just keep trying or back later. One more insidious cause might be the Web software itself playing up. If you get refused from three sites in a row, reboot and try again.

IF ALL ELSE FAILS

If you really must find a site, go to Lycos, Yahoo, Harvest, the WWWW or any of the searching tools. Use the distinguishing words from the site's title as the search terms. Failing that, try searching on related subjects. Even if you still can't find what you want, you'll probably discover half a dozen similar, if not more interesting, pages.

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Access Providers

BBC NETWORKING CLUB

http://www.bbcnc.org.uk/

This is a growing bulletin board with general information on the BBC's broadcasting schedules and activities. There's public access to TV and radio listings, album charts and even Radio One's playlist and rotation schedule. The links to, and explanations of, various Internet searching tools and browsers make this a useful starting place for learners. For £5 a monthyou can join Auntie, the resident BBS, conference with programme makers, and access files and other information.

CITYSCAPE GOLDSITE EUROPE

http://www.cityscape.co.uk

Don't miss out on the more arcane corners of the Internet, but if you mean business this is an excellent place to start. You can access news (mostly ads), Internet information, back issues of the *Guardian* on-line and links to servers and services like the BBC Networking Club, Live at the ICA and Cyberia. Goldsite Europe looks good, feels solid and generally lives up to its claim to be 'your one-stop Internet information site'.

COMPUSERVE

http://www.compuserve.com

Patchy information designed to persuade you to join.

DEMON INTERNET

http://www.demon.co.uk

Home page of the UK's largest and fastest growing provider. Visitors to this site may have been alarmed by the slow responses, but this should improve when a new system comes online. With this increased capacity, the offer of free client pages and the proliferation of hypertext editors, expect an explosion in new and interesting Web pages.

EASYNET

http://www.easynet.co.uk

As the name suggests this friendly looking page from the UK access provider Easynet is an easy to understand introduction to surfing the Net for business and pleasure. You won't be bogged down with any excess verbiage; it's all simple and useful particularly for newcomers. You can link to various shopping, business and start-up sites or be sent straight to Cyberia.

EUNET GREAT BRITAIN

http://www.britain.eu.net

The second of two major corporate Internet service providers, EUnet has strong connections with continental Europe. This page has a link to EUnet's main page which then provides links to its European sites. This fairly spartan launchpad to heavyweight commercial and media pages has no padding, so no time is wasted. The link to GBnet gives ample information about EUnet's UK presence.

NETWORK MCI

http://www.mci.com/

At every mouse click, keystroke and step through the virtual tour of Gramercy press, this bloated advertising montage from MCI reinforces its corporate marketing plan. It's all wishy-washy, condescending, puffed-up hard sell and thus something we, intelligent consumers of the cyberage, tend to reject. If you can battle your way through the guff, you'll find no mention of cost, but you will find a two-month free trial.

PIPEX

http://www.pipex.net

Pipex's approach is certainly very business-like and the user is left in no doubt that the company intends to remain a major presence. At first glance, there doesn't appear to be much else here but, access its worldserver, for example, and you'll find several pages of useful links, most with a heavy commercial emphasis. It's lean but relatively trash-free.

REDNET ONLINE

http://www.red.net

This is not as concise as, say, EUnet's site, nor as overflowing as Netscape's, but it does have a friendly, efficient and unthreatening English accent, which is very refreshing. There are three main sections. Local Services has announcements, items for sale and support groups, while the Laboratory has Internet information. Enter the Black Hole to be sucked into a void of movie, image and sound libraries and links to other general, academic and corporate Web servers. You can email Rednet at webmaster@rednet.co.uk

Adult

ALT.SEX.MOVIES. HOME PAGE

http://www.xmission.com/~legalize/asm/asm.html

This page features lists, FAQs, movie reviews, fan club addresses, mail order sources, filmographies and other information relating to the sex flick trade.

BIANCA'S SMUT SHACK

http://bianca.com/shack/index.html

This site is an absolute labyrinth of surprises, trap doors and vulgarities. There are plenty of opportunities to add your own thoughts but make sure you read some of the other contributions. To explain too much would spoil some of the impact, but be warned the deeper you go, the darker and more revealing it gets.

BLOWFISH

http://www.best.com/~blowfish/

Blowfish is a mail order company specialising in what it calls sex-positive erotic merchandise. You can access this via an online or paper catalogue and order by email. There's also a sexuality information centre featuring many links to sex-related documents and services.

CONDOM COUNTRY

http://www.ag.com/Condom/Country

Mail order condoms and sex aids but the mere mention of a penis size ready reckoner may prove disquieting to some.

HOMOSEXUALS AND THE CHURCH

http://vector.casti.com/QRD/religion/

This index points to many documents relating to the church's attitude to sexuality.

KYLIE MINOGUE

http://www.eia.brad.ac.uk:80/kylie/

Provocative lyrics, sexy soundbites, explicit track

NEW

The bare, naked truth

LIVE NUDE VIDEO TELECONFERENCING

http://www.cts.com/~talon/

It had to happen – dial in, pay up, download the software and a private model will call you back. You'll intercept the call with your PC to find her nude, live and waiting for your instructions. It's a fully interactive experience, but don't worry she can't see you. You can even preview images online to see what you're in for. Now you can learn about all those difficult-to-understand female organs, without embarrassing your mother.

What's on

listings, x-rated videos, lurid scans and access to every Kylie-porn resource thinkable. This one's in the Adult section due to Ms Minogue's 'raunchiness'.

LOVELINK

http://www.cityscape.co.uk/lovelink/

Advertise or browse for a potential mate. To make contact you must phone a charge call service, using a pin code and leave a message.

PLAYBOY

http://www.playboy.com/

A well-designed entry from this top shelf publisher featuring articles and merchandising. If you're curious to see what a girl would look like in the nude, you may want to download the airbrushed photo.

QUEER RESOURCES DIRECTORY

http://vector.casti.com/QRD/.html/QRD-home-page.html

A massive homosexual resource of information on Aids, legal news, attitude trends, clubs, publications, broadcasts, images, military gays, political action and community groups.

YELLOW SILK

http://enews.com/magazines/ys/

Here are some extracts and pictures from this 12-year old erotic journal. Aimed equally at women, you can expect more poetry than pictures.

Art

ANDY WARHOL MUSEUM

http://www.warhol.org/warhol

A good example of how to implement an online art gallery, Pittsburgh's Andy Warhol Museum has the advantage of only focusing on one artist's work. Tours of the physical museum and picture lists are on offer, but downloading at less than 14.4kbps will probably take longer than the paint took to dry.

@ART GALLERY

http://gertrude.art.uiuc.edu/@art/gallery.html

This digital art gallery has a new exhibition every six weeks, but don't worry, all the old ones are archived.

17TH FLOOR DIGITAL PICTURE ARCHIVE

http://olt.et.tudelft.nl/fun/pictures/oldpictures.html

The pornography section of this massive digital picture archive recently closed down due to over demand, so now you'll have to restrict your downloads to categories such as art, comics and computer-generated cars and aeroplanes.

LE LOUVRE

http://mistral.enst.fr/~pioch/louvre/

A superb tour of Paris' Louvre. There are two exhibitions: famous pictures and a medieval art display. Paintings are classified by artist and, although not every work in the museum is included, there is an excellent selection of the most famous. You can even download the rather esoteric choice of accompanying music.

RAYTRACED IMAGES

http://www.hmc.edu/~awells/files/raytrace.html

More images created with Persistence of Vision – Ray 2.2, including all the samples in the package as well as others gleaned from the Net. If you want to contribute your own they may display it for you.

STEREOGRAM PAGES

http://mphh2.ph.man.ac.uk/gareth/sirds.html

This is a launch pad to many sites featuring single image random dot stereograms. There's software, FAQs and plenty of advice as well. In no time, you'll be able to induce a migraine at will.

STRANGE INTERACTIONS

Gopher: amanda.physics.wisc.edu:70/11/show

An exhibition of prints, etchings and lithographs by physicist John E Jacobsen, some of which are superb. Check out the Cybersex sketch – it may not be what you would expect.

VIRTUAL GALLERY

http://www.atom.co.jp/GALLERY/

An interesting modern art exhibition from Japan including a semi-racy photographic series by Hisayoshi Osawi featuring subjects in non-sensible shoes.

WRITING ON THE WALL

http://www.gatech.edu/desoto/graf/Index.Art_Crimes.html

A diverse collection of international graffiti art – useful if you're thinking of redecorating your bathroom.

Banks

BANK OF AMERICA

http://bankamerica.com

Here, you can locate your nearest Bank of America branch or ATM – apply for a job or read press releases. If you bank in California there is a special offer which enables you to access and manage your account online. This costs about US$40 per month plus a set-up charge and will allow you to reconcile your books, monitor cheque clearance, transfer and stop payments and view your balance via your PC.

BARCLAYCARD NETLINK

http://www.barclaycard.co.uk/barclaycard/

This is as staid as you would expect from the UK's largest credit card company. Make sure you choose the text option as the pretty graphics are very slow to load, even at 64k. This service offers an online way of ordering brochures and complimenting the bank via a feedback form. The promise is serious online features such as credit card applications and help desk support, but at this stage it's just the stuff in the leaflet holders you avoid as you're waiting in the queue.

FEDERAL RESERVE BANK OF NY

Gopher: gopher.csc.fi/11/other/intedu/usg/money

This Gopher site gives fairly current data about the Federal Reserve Bank of New York's spot exchange rates, as well as documents on other FRB and Treasury stats, such as historical money stock data and Treasury yield curve data. There's also info on exchange rate trends. Keep your calculator handy.

VISA

http://www.visa.com/visa/

Find out about the future of Visa, electronic banking, its

NEW

Hyper-real ray tracing

PERSISTENCE OF VISION

http://www.uio.no/~mwatz/pov/

Persistence of Vision is a popular shareware ray tracer which appeals to those who don't draw but prefer to create images as a sum of their mathematical parts. This can create hyper-real representations characterised by the use of light rays. By setting certain constraints, such as surface texture, reflection, refraction and light source positions, objects can be replicated so closely, they make photographs look phoney.

product range and your nearest ATM. Will Visa succeed in achieving 'one world, one currency'? Watch this spot.

WORLD BANK

http://www.worldbank.org

This is a good example of how a publicly-funded international body can make its work more widely available. There are complete lists of the reports available, from Rainfed Rural Development in Morocco to Stabilisation and Adjustment in Argentina. Unfortunately, at the moment it's not possible to get entire documents. To get the complete information, you're referred to your local World Bank office, which seems like a missed opportunity.

Books

CAMBRIDGE UNIVERSITY PRESS

http://www.cup.cam.ac.uk

As well as the standard online catalogue and publishers' details, there is information about future titles, such as the Cambridge Encyclopedia of the English Language.

FUTURE FANTASY BOOKSTORE

http://www.commerce.digital.com/palo-alto

The Future Fantasy Bookstore specialises in fantasy, horror, science fiction and mystery books. You can browse in the store, get samples of old and new material, and look at the exotic cover art associated with this type of literature. At present the bookstore is not accepting payment via the Net for security reasons, but expect it to introduce an online service in the near future. The store can be emailed at futfan@netcom.com

KEGAN PAUL INTERNATIONAL

http://www.demon.co.uk/keganpaul/

Another dreadfully slow Demon site, but we're told things will speed up soon. This major educational publisher is making its entire catalogue available for international mail order and it specialises in works on and from the Middle East, Africa, Japan and Asia. There are also some interesting snippets of news from these regions.

Business

AFRICA COMMERCIAL

http://www.africa.com/

This Cape Town service promises to encourage business with and within the newly acceptable South Africa. The facilities are in place, but at this stage not many have taken up the offer. If you want to do business in this region, or are curious about opportunities and protocol, it's not an expensive place to put your feelers out.

COMMERCENET

http://www.commerce.net

CommerceNet is a consortium of US Silicon Valley companies which have come together to create an electronic marketplace and these extensive Web pages track the development of that marketplace, with thorough examples of applications. This is essential reading for anyone looking at the Internet from a professional point of view – the future of doing business on the Internet will probably happen here.

CYBERPRENEUR'S INTERNET GUIDE

http://asa.ugl.lib.umich.edu/chdocs/cyberpreneur/Cyber.html

A massive and crucial collection of links pointing to information relevant to setting up enterprises on the Internet.

DIGICASH

http://digicash.com

Ecash is a recent Internet security initiative and this is its home page. Electronic 'cash' is purchased from Digicash to pay for a growing range of services. This system is the brainchild of an organisation with its roots in bank 'smart cards'. It's still experimental, but the company hopes to set a standard. You can register here, with your own electronic wallet of ecash. There's a growing number of shops participating which are all ▶

The key to Internet Security...

The Marketing Director needs to advertise on the Internet. Researchers want to access the Internet's vast resources. Everyone is demanding global Internet communication. Your company is losing business by not being on the Internet.

Your concern is that an Internet connection presents security risks. You need a solution which provides connectivity without compromising your internal network security.

FireWall-1, with its advanced packet filtering technology, prevents unauthorised access whilst allowing transparent connectivity. Its advanced Graphical User Interface simplifies configuration and provides remote management and alerting. Powerful auditing and logging facilities record and interpret all attempted security breaches.

For a free 30 day evaluation, call Integralis on 01734 306060.

FireWall-1
is a product of
CheckPoint Software Technologies Ltd.

INTEGRALIS

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Fax: +33 72.39.52.53

Integralis GmbH
Germany
Tel: +49 (0)8106 31350
Fax: +49 (0)8106 31912

What's on

accessible from this page as well as details on how to start your own shop.

DIRECT MARKETING WORLD

http://mainsail.com/dmworld.htm

Resources for direct marketing such as lists, list-builders, copywriters, consultants and agencies. There's a growing employment section, literature for sale and guides to using direct marketing on the Internet. However, the site is poorly laid out and uses far too much bold type, despite being compiled by people who should be experts in correspondence.

E-NET ENTREPRENEUR

http://www.cyberzine.org/htm/Entrepreneur/enetpage.html

Here you'll find a wealth of links to business resources and commercial sites. The Classic Internet Ad Samples have loony products for sale, such as the talking fork, the yummy yummy toothbrush, the swearing key ring and the rapping Christmas tree. Possibly the most capitalist site on the Web.

MECKLERWEB

http://www.mecklerweb.com

MecklerWeb is US publisher MecklerMedia's commercial Internet presence. This tight professional site is setting a high standard with daily Internet news, company announcements, a multi-storey shopping mall, net happenings and smart advertising promotions – you really feel the fog is clearing and whole thing is coming together.

MILLENIUM

http://www.milfac.co.uk/milfac/

This site currently has information on over 26,000 UK companies and the aim is to expand to 3 million, which will also include a large proportion of European listings. You can search by product/service category or by name. At the moment it's a very slow service, probably due to the access provider, but this may change.

ON RAMP

http://www.ramp.com

This site aims to be an Internet 'one-stop shop'. The road motif is used throughout as you journey down the highway, with exits to various places. The business section includes banks, stock market prices, Wells Fargo business services and the US Patent Office. The rest stop offers humour, a huge games section and chat lines. You can check out clients' home pages or visit the products and services area for trips to health clubs and restaurants. This is a great site with lots to see and do.

SONY

http://www.sony.com/

This US site of the Japanese electronic and multimedia giant features news, service and support, product information and material from its huge stable of film, music, publishing, video, games and electronics interests. There are even audio pages for top music talents such as Mariah Carey, Black Sabbath and Oasis.

THE INTERNET GROUP

http://www.tig.com

The Internet Group is another doing-business-on-the-Internet firm. As well as pages on TIG's publishing, consulting and seminar services, there are also links to services offered by its clients, as well as sections of information about the commercial use of the Internet. If you're planning business or professional use of the Internet, TIG is an essential destination. Its Hot Sites page offers links to commercial use in categories such as travel, government, financial services, legal services, shopping malls and storefronts.

Computer Hardware

APPLE

http://www.apple.com

This site offers a plethora of information and resources; everything from Apple's press releases through to current

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TCP/IP FOR WINDOWS
Office Home Mobile Remote

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100% DLL WinSock Stack
5 Min. Installation

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- ARCHIE CLIENT
- INSTANT INTERNET

- Installs in 5 Minutes
- Native Windows installation and ease of use

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Ethix DISTRIBUTION
Ethix Ltd, Ethix House, Meadow Court, Off Market Place, South Normanton, Alfreton, Derbyshire DE55 2BN
Email: sales @ calibra. demon. co. uk
Tel: +44 (0) 1773 863666
Fax: +44 (0) 1773 863919

product information, technical support and developer data, together with links to other Internet sites that hold Apple-related information.

COMPAQ

http://www.compaq.com

This is an excellent example of how PC hardware servers should be presented. The home page offers a choice of text or graphics. The index pages are scaled to fit neatly on a PC screen – easy to do but hardly ever done. The content is a good mixture of information and marketing material, plus product support, including a wide selection of downloadable files. Other vendors would do well to read these pages for ideas on how to present themselves.

DIGITAL

http://www.digital.com

This is the main Digital home page and it provides links to other Digital web servers and to professional associations sponsored or supported by the company. It all adds up to a comprehensive service, devoid of fancy graphics and marketing puff but on the whole it could be a bit more colourful. There are, however, a few whimsical links to the likes of the Palo Alto Cloud Gallery and the Future Fantasy Book Store.

HEWLETT-PACKARD

http://www.hp.com

HP's recently-improved service includes access to drivers and patches for peripherals and other hardware products. This is a good example of how a properly set up Web server can deliver easy, cheap support.

IBM

http://www.ibm.com

A compendium of IBM marketing info with an emphasis on its technological prowess, but there's no technical or support advice and if you're having problems with OS/2 3.0, you'll have to look elsewhere. There is, though, a spoken message from the chairman of IBM. This site seems to be updated regularly, but could do with more technical 'bottom'.

INTEL

http://www.intel.com

Product and support information and a list of 'off-ramps on the infobahn'. There are some handy pointers profiling Internet users and a neat set of graphical usage statistics.

NEW

The new South Africa

WILSON KELLER AGENCY

http://www.aztec.co.za/wka/wka.html

Nothing but unashamed puffed up self-promotion from this South African advertising agency, with such gorgeous graphics that you'll overlook their corporate rhetoric. What's more, it just might bring them business.

NOVELL

http://www.novell.com

Novell, the company behind the NetWare network operating system, has made a big move recently to shift its support and information services to this Web server. What has been available through CompuServe Netwire for some time is now here. If you have local call or ISDN Internet access, this is the cheaper alternative. In a simple and straightforward fashion, Novell is up there with Microsoft showing how the Internet can be used to deliver value to users.

POWER PC MAGAZINE

http://power.globalnews.com/

Power PC magazine, edited by industry man-about-town Chris Rose, publishes every two weeks and offers a neat twist to the usual electronic mag story. When you subscribe (at the moment this means registering your name for free), you receive the contents page by email. This alerts you to retrieve the stories. Big stories are subsequently sent to you at any time, when they break, by email and they appear under the heading PowerFlash. This site's access is supplied by BT.

SUN MICROSYSTEMS

http://www.sun.com/

Information about Sun Microsystems, its products and support, as well as research and technology news such as the Sunergy satellite broadcasts. There are links to other Sun sites, located in London, Singapore, Tokyo, Moscow, Johannesburg and Hong Kong, and these provide easy access to public domain software, Sun and government information, as well as material such as the Internet Underground Music Archive. Sun is one of the foremost players in encouraging the development and the use of new technology on the Internet, so keep an eye on this site.

UK UNIX USER GROUP

http://web.dcs.bbk.ac.uk/ukuug/home.html

All things Unix can be found here, courtesy of the UK Unix User Group. You can access membership details, a substantial software archive, the organisation's newsletter and links to other relevant sites. If you're into Unix in a big way this is a must.

Computer Software

ADOBE SYSTEMS INC

http://www.adobe.com

Stop here for information about Adobe products and support. The reader software Acrobat is available for download and you'll find plenty of PDF (Portable Document Format) files and site links to browse.

HARRIER SOFTNET

http://www.harrier.com

A simple, unpretentious set of pages giving technical information about TCP/IP products distributed by Harrier in the UK and France, including seminar dates as well as in-depth technical information.

IBM OS/2

http://www.ibm.net

This page is nothing short of what you would expect from industry heavyweight IBM. There are links to travel, shopping, libraries, PC information, sports, news, cool and new sites, business advice and most things you can think of. However, be careful not to click on the home page pointer unless you really need a run-down on IBM products. This will be the home page for OS/2 users and is a great, though humourless, resource.

LOTUS DEVELOPMENT

Email: support@ccmail

Electronic mail support for Lotus's cc:Mail, the second most popular commercial electronic mail package.

MATLAB

http://mathworks.com

The MathWorks home site includes support for all the company's scientific and engineering software, for example a 'work around' on the problems caused by the Intel Pentium processor. There's also a gallery of mathematically created art which needs more entries, if you're a Matlab wiz.

MICROSOFT

http://www.microsoft.com

This major effort by Microsoft will show computing companies how to extend their services ▶

What's on

through the Internet. Although the Web site is still under development, there's a large amount of information for developers and Microsoft product users. This includes sections of information about Windows and Wolverine – the new 32-bit TCP/IP stack for Windows. It's also possible to get access to patches, sample code and text files. This will be a major Internet resource and is also available via FTP at ftp.microsoft.com and Gopher at gopher.microsoft.com

SYMANTEC

http://www.symantec.com

Product information, news, service and support, company details and a very good set of links to other vendors.

Education

INTERACTIVE FROG DISSECTION

http://curry.edschool.virginia.edu/~insttech/frog

This online tutorial is just one of the great educational resources on the Net. It sets out to teach you how to be nifty with a knife in the biology classroom and is aimed at US high schools, so it's suitable for UK secondary students. The text is admirably clear and the movies alarmingly to the point. This is not for the squeamish, but then again watching a frog being hacked to pieces on screen is probably preferable to doing it yourself.

INTERPEDIA PROJECT

http://www.hmc.edu/www/interpedia/index.html

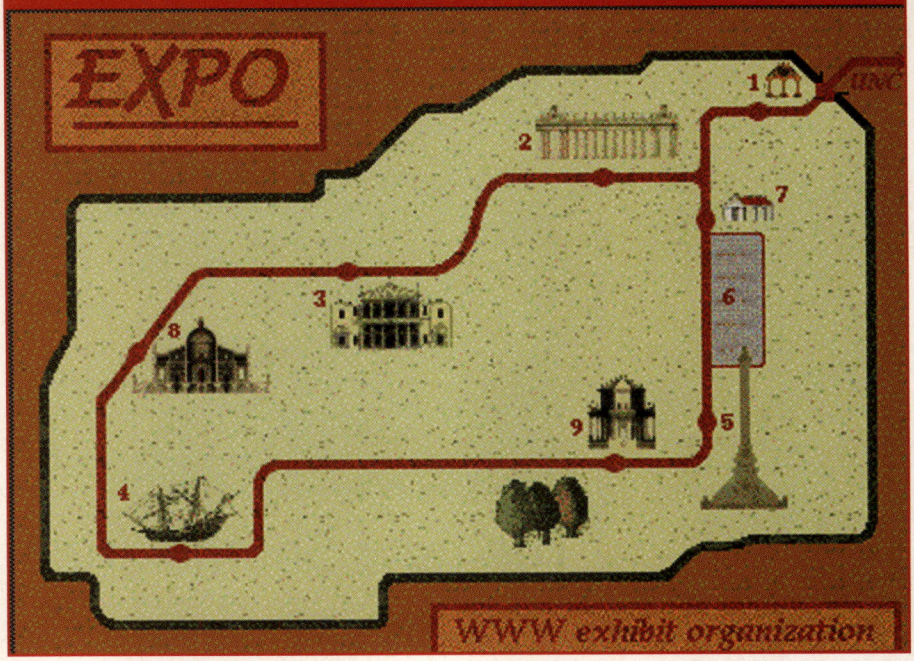
The Interpedia Project aims to bring an online encyclopedia to the Internet. Here you can find out more about the project or obtain details on current and experimental information resources around the Net.

KIDS WEB

http://www.npac.syr.edu/textbook/kidsweb/

Choose from a range of 19 main subject categories of educational interest. Don't be put off by the 'kids' emphasis. There's something here for you. Other links include instructions on how to set up a Web server in your classroom and a collection of other sites set up for children.

CHOICE



EXPO TICKET OFFICE

http://sunsite.unc.edu/expo/ticket_office.html

Here's a refreshing alternative to the usual hot site theme park, presented by the US Library of Congress. You can jump aboard a virtual bus to tour exhibits of the Vatican, Soviet Archives, European exploration of the Americas, Dead Sea Scrolls, Museum of Paleontology and the city of Spalato. After all that, you're dropped off at the Expo Restaurant to sample the daily masterpieces of French cuisine.

Employment

CAREERMOSAIC

http://www.careermosaic.com/

By far the most professionally constructed employment service on the Internet. You can search through its home database which features a rapidly growing field of heavyweight clients, such as Chemical Bank, Intel and National Semiconductor, or use the browser to scan the Usenet groups. As with most employment sites, there's plenty of advice on resumés, career trends and salaries. Each client has its own set of pages with extensive details on its employment conditions and corporate activities.

INTERACTIVE EMPLOYMENT

http://www.espan.com/

Drop in here for job listings and hunting advice – there are tons on offer, mostly in US Fortune 500 companies. You can search by region or job type. However, it's a big clumsy system and you'd have to wonder if the jobs are current.

IT JOBS WWW SITE

http://www.britain.eu.net/vendor/jobs/main.html

Efficient selection and sorting routines make this a handy service. Job listings are updated by several agencies.

JOB OPPORTUNITIES IN ENTYMOLOGY

http://www.colostate.edu/Depts/Entomology/jobs.html

Looking for an international placement in apiculture, acarology or insect comparative morphology? Try here.

JOBS AT CREATIVE LABS

http://www.creaf.com/www/decjob.html

Engineering, IT, sales, support and programming staff wanted at the home of Sound Blaster.

JOBS AT MICROSOFT

http://www.microsoft.com/pages/services/jobops/toplevel.html

International graduate, design, development, testing and marketing jobs available throughout Microsoft.

ONLINE CAREER CENTRE

Gopher: gopher msen.com

Here job-hunters in the US and Canada are invited to browse profiles of companies which are actively recruiting staff. Vacancies are classified by state and city, and many have contact names, a full job description and an email address. There is also a section on how to write a CV and once you've done that you can post it to thousands of potential employers or a carefully targeted few. Each CV posting lasts for 90 days, then it is removed. If you are still searching, simply re-submit it.

Entertainment

ANIMATE AGENT LABCAM

http://vision.uchicago.edu/cgi-bin/labcam

Another one of the many cameras on the Internet, this one's included because it gives

you robot control over magnification, colour, image enhancement and brightness and you can point at the photo to direct the zoom. As with all these cameras, the technology is impressive, but there's nothing to look at when you get there.

CATHOUSE BRITISH COMEDY PAGES

http://cathouse.org:8000/BritishComedy/

You can find links here to a multitude of, mostly British, comedy archives and sites around the Web, featuring acts such as the Goons, Alan Partridge, Absolutely Fabulous, Bottom, Blackadder, Carry On films, Douglas Adams and Ben Elton. This site is also home to the Bricomedy Digest, an e-zine devoted to past and present British humour.

CYBERIA

http://www.easynet.co.uk/pages/cafe/cafe.htm

This is the home page of the UK's first Cybercafé, featuring loads of links to fun spots such as art galleries, astrological forecasts, cool sites, museums, film databases, music pages, UK guides, a virtual nightclub, sports pages, campaigns and even a dating agency. This ultra-hip café located in the heart of London's West End, is an ideal place to connect directly to the Internet at 64k, without the costly overhead. If you can't make it down to Cyberia in person, look in the guide to cybercafés around the world. Maybe there's one opening near you soon.

CYBERSIGHT

http://cybersight.com/cgi-bin/cs/s?main.gmml

Not a bad arty home page with a friendly groovy feel. There are links to favoured and unfavoured sites, chat forums, games, trivia and opinions.

JUSTIN'S UNDERGROUND LINKS

http://raptor.sccs.swarthmore.edu/jahall/

Almost every link from this popular and well-maintained site is worth a look. There's a focus on the clandestine, the visual and the bizarre. There are simple instructions on how to publish your own page and even advice on how to hack HTML. If you're looking for the most twisted sites on the Web, Justin's choice of The Weird, The Wild and The Wonderful is a fine place to dive in.

LAUGHWEB

http://www.misty.com/laughweb

Humour of all sorts, even quips about Intel's Pentium mishap.

LOCKPICKING

http://www.lysator.liu.se/mit-guide/mit-guide.html

Thanks to the great minds at MIT, an indispensable illustrated lock-picking guide for potential felons. They laughed when I told them I was learning to burgle, but when they came home...

UK NATIONAL LOTTERY

http://ribble.csc.liv.ac.uk:80/users/rkl/lottery/

Everything you need to know about the UK lottery – statistics, winning numbers, draw details, numerical analysis and instructions. Everything, that is, except the only thing that matters...

VOICE SYNTHESISER

http://utis179.cs.utwente.nl:8001/say

Enter your profanity, hit return and wait for the response to be automatically launched by your sound player for the mirth all within earshot. Try spelling words phonetically for success.

Exhibitions

THE INTERFACE GROUP

http://www.comdex.com:8000

The Interface Group is the organiser of the major Comdex series of computer trade shows. These pages offer exhibitor lists, conference schedules, travel and accommodation, and visitor registration information. At present, though, you can't register online for any of the events – an application that surely can't be far off. An important challenge for exhibition organisers is to keep their pages up-to-date.

ZIFF-DAVIS EXPOS

http://www.zdexpos.com

An awful-looking home page in conjunction with poorly-structured information mars a useful collection of Web pages that provide exhibitor lists, conference programme details and other information about the Networld and Interop exhibitions in the US, France, Germany and Japan. Ziff-Davis pioneered online registration from this site and the server is certainly one to watch. Ultimately, the company has plans to run Internet exhibitions.

Film and TV

BEAVIS AND BUTTHEAD

http://calvin.hsc.colorado.edu/

Much what you would expect from a rabid fan of MTV's pop culture analysis, as seen through the eyes of two dysfunctional juvenile delinquents.

BIG MAC'S MONTY PYTHON ARCHIVE

http://www.xs4all.nl/~bigmac/python.html

This is a copyright-abusing compendium of Python pictures, clips, audio and scripts. The big drawback for fans is that the only way to download them is to pay in DigiCash (see Business section) – may be the wackiest ever way of trying to create a de facto standard.

BUENA VISTA PICTURES

http://bvp.wdp.com/BVPM/

This site previews movies from Touchstone and Disney. The title screen is an old-fashioned movie house. Walk through the doors to watch excerpts from new films and interviews with the stars. If you have a good system and video player, plus time to download the minute-long video cuts, you'll be delighted by the quality.

CARDIFF'S MOVIE BROWSER

http://www.cm.cf.ac.uk/Movies

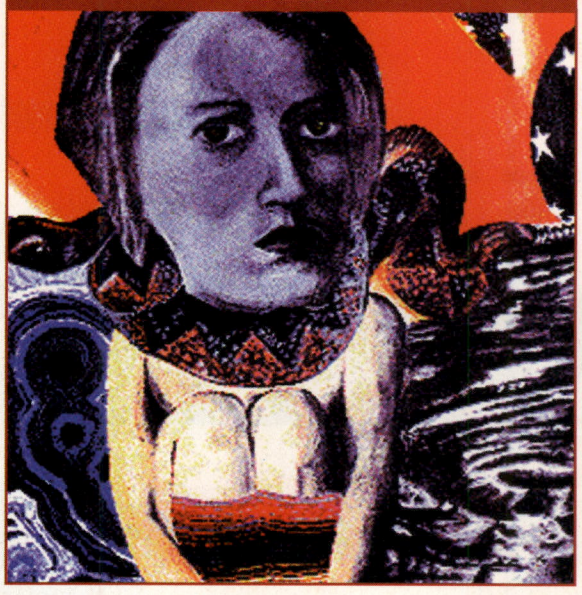
An exceptional relational database of movie, cast and review information, selections can be cross-referenced to find an actor's complete biography by clicking on their name in another cast list. Most films are rated by online voting and users can contribute. If have even the most transient interest in film, you must check this out.

CHANNEL 4

http://www.cityscape.co.uk/channel4/

This page forms part of Channel 4's follow up service. You can follow up on programmes you've seen or may have missed

NEW



MOSCOW ALTERNATIVE SCHOOL CENTRE

http://www.fsr.com/~janesta/masc/index.html

Moscow, Idaho that is – with hours from 3pm to 9pm, five-week terms, tailored enrolments and the option of external tuition. Check out the graphics.

What's on

to receive more information or contact participants. Also included are full scripts to two episodes of the excellent Equinox programme.

MCA/UNIVERSAL CYBERWALK

http://www.mca.com

New features from the MCA/Universal stable, presently featuring interactive premieres of Arnie's Junior and Kylie and JC Van Damme's Streetfighter – a glittering showcase of the finest acting talent available to MCA.

PULP FICTION

http://www.elmail.co.uk/movie/pulp

If the Internet is your only contact with the outside world, you may not yet have overdosed on the hype surrounding the release of Tarantino's Cannes winner. Those with a fixation on the incomplete may like to download excerpts from the soundtrack or movie. Since the video is likely to be a long time coming, this is probably the best source.

RED DWARF

http://www.hal.com/~markg/docs/RedDwarf/rd-home_page.html

Episode guide, FAQs, favourite quotes, images and sounds from the excellent British sci-fi situation comedy.

STAR TREK GENERATIONS

http://generations.viacom.com/

Previews, news, peeks behind the scenes and merchandising from Paramount Pictures' new Star Trek film – this site claims to bring the final frontier to the cyber frontier. In this latest installment of our favourite space soapie, through some astrological illogicality, Captain Picard comes face to face with Captain TJ Hooker.

STAR WARS MULTIMEDIA

http://bantha.pc.cc.cmu.edu:1138

Strictly for diehard buffs of R2D2 and CP30 and not the fabled, defence project.

THE CAPT JAMES T KIRK SING-A-LONG

http://www.ama.caltech.edu/~mrm/kirk.html

Audio excerpts from William Shatner's bold vinyl masterpiece 'The Transformed Man'. Inspiring stuff!

THE SIMPSONS

http://turtle.ncsa.uiuc.edu/alan/simpsons.html

Listen to Homer drool "Two all-beef patties, special sauce..." and the like. The stills and animations are as good as you would expect and the sound files have a certain endearing cutesiness which many fans will enjoy tirelessly.

TV NATION

http://www.teleport.com/~xwinds/TVNation.html

Episode listings, poll results and transcripts of the historic TV Nation day bill passed in the US Congress – brought to you by Michael Moore's brilliant cutting-edge current affairs satire programme.

TV NET

http://tvnet.com/TVnet.html

Here's an idea for a quiet drinking game. Going round the table in turns, name a US TV show. If it doesn't have a home page here, skoal one shot of tequila. Expect to leave sober.

TWIN PEAKS

http://pogo.wright.edu/TwinPeaks/TPHome.html

If you can't get enough of the decade's TV highlight *Twin Peaks*, this is for you. All the Log Lady intros, cast lists, theories, hidden allusions, FAQs, scripts and other Twin Peak links are available, as well as pictures.

Finance

CURRENCY CONVERTER

http://www.ora.com/cgi-bin/ora/currency

This nifty program makes currency conversion a doddle no matter what form you have it in.

Windows SHOW

OLYMPIA 28th FEB

By clicking on one of nearly 60 currencies you can create a new list, with your selection as the basis. Rates are updated weekly.

MARKETMIND

http://www.marketmind.com

Subscription financial data and analysis service featuring MarketMind's own black box trading software. These systems generally look at stochastics, moving averages, convergences, divergences and pattern breaks to signal a market opportunity. The crash of 1987 was blamed on similar systems, although in less extreme situations they can limit losses and take advantage of trends. Caveat Emptor!

QUOTECOM

http://www.quote.com

Like other financial data services, you need to pay to access live stock data here. UK data is available along with the most popular US and International prices. There is a rudimentary charting package but nothing to satisfy fans of Gann, Candlestick or Elliot theory. As there's plenty of dial-up competition in this market, look around before you pay. Don't buy too much historical data, though, as this is free by FTP or by befriending other chartists.

Food

CHOCOLATE LOVERS

http://www.ios.com/~shag/chocolate.html

This page features links to, and short comments about, providers of chocolate and all things chocolatey on the Internet. You'll be surprised at how many there are, but at this stage they're all US-based. Not to worry – most will deliver internationally...if you can wait that long.

LE CORDON BLEU

http://sunsite.unc.edu/expo/restaurant/restaurant.html

The daily menu here is from the internationally famous Parisian cookery school, Le Cordon Bleu. There are seven menus on offer, all with full recipes taken from the book, Le Cordon Bleu at Home. You can find out more about classes in Paris, London and Tokyo, as well as details of their publications.

LONDON PUBS REVIEWED

http://www.cs.ucl.ac.uk/misc/uk/london/pubs/index.html

You can even add your local local to the list.

PIZZANET

http://www.pizzahut.com

This pioneering service is becoming as famous as the Internet itself, even though it can only deliver in California. However, the server is way over in Kansas so there's no reason why this electronic storefront should not come to a Pizza Hut near you. If it turns out to be profitable, that is.

SHY MONGREL

http://jumbo.pipex.net/intervid/esp/

This is part of the far-too-clever-for-its-own-good advertising campaign by Grolsch but does it work? Have you or anyone you know switched to Grolsch? There are also several links intended to tickle the five physical senses.

SPENCER'S BEER

http://guraldi.itn.med.umich.edu/Beer/

Here you'll find a number of online home-brew recipe books, including the entire Cat's Meow series. Bottle-spotters will be thrilled to learn that there are 228 labels displayed in 128 colours.

TANGO SPONSORS THE WORD

http://tango.hhcl.com/

Warning! Another Demon site, with heavy graphics to boot, so make a coffee while you wait for each page to download. If you watch *The Word* you may have seen this address flashed on the screen during the Tango advertisements. You'll find it pointedly tasteless and sometimes humourous and there are pictures and clips from *The Word*, all couched in that *Viz*

1
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What's on

magazine top tips-type understated irony. But does it sell the product?

TASTY INSECT RECIPES

http://www.public.iastate.edu/~entymology/InsectsAsFood.html

Such delights as Bug Blox, Banana Worm Bread, Rootworm Beetle Dip and Chocolate Chirpie Chip Cookies (with crickets).

VIRTUAL PUB

http://lager.geo.brown.edu:8080/virtual-pub

A pack of drunks getting dewy-eyed over lager – just like wine boffs only with more elbow-waving than beard-stroking.

Games

DOOM WWW INFORMATION

http://www.ping.de/~sven/doom/

Billed as the best place to make new enemies, this site acts as a dating service to meet fellow Doom addicts, so you can hunt them down and kill them via your modem.

I-CHING

http://cad.ucla.edu:8001/iching

If you're not happy with your fortune as told by this interpretation of the Chinese I-Ching, you can always reload and get another one.

LITE-BRIGHT

http://www.galcit.caltech.edu/~ta/lb/lb.html

This is fun. You insert coloured pegs into a board, one colour at a time, to create a pretty picture. After you've finished, submit it to the gallery.

NATHAN COCHRANE'S HOME PAGE

http://www.iinet.com.au/~nathan/index.html

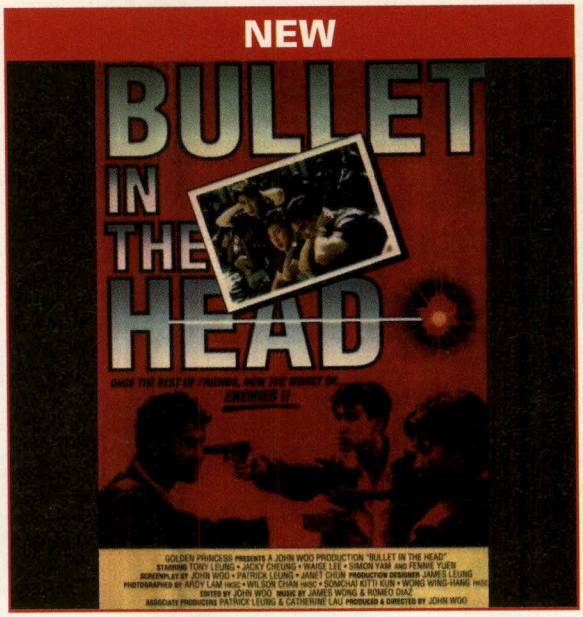
An original source page of game reviews and pre-release info.

PLAY BATTLESHIPS

http://manor.york.ac.uk/htdocs/bships.html

A one-way game of battleships against the computer. There is a way to cheat – see if you can work it out.

NEW



HONG KONG MOVIES HOME PAGE

http://www.mdstud.chalmers.se/hkmovie/

Find out about the action director's director John Woo and read profiles of actors such as the genius Chow Yun Fat. There are plenty more, including a searchable database, MPEG movies, images, FAQs, interviews, news gophers and even the Hong Kong Popstars Archive.

SEGA

http://www.segaoa.com

News, special events, promotions, new releases, hints, product descriptions, screen shots, audio/video clips and support for Sega games.

TAROT INFORMATION

http://cad.ucla.edu/repository/useful/tarot.html

You can choose from a short three-card reading or the full Keltic Tarot one. Even if you think it's all baloney it can still leave you feeling unsettled.

THE CHESS SERVER

http://www.willamette.edu/~tjones/chessmain.html

This experimental server allows two people to play chess over the Web. Multiple games can be played simultaneously and any number can watch. The graphical interface is realistic.

THE FASCIST GAME

http://wombat.doc.ic.ac.uk/fascist/fascist.html

You'll take ages to figure out this strange email game. It's not that it has no rules. On the contrary, the object is to make them up. If they are accepted, your score changes in a way you won't be able to understand, until you've spent some considerable time here. Confused? That's the general idea.

THE GAMES DOMAIN

http://wcl-rs.bham.ac.uk/GamesDomain

There are oodles of game pages, FTP sites and gamezines on offer here. This is the largest and possibly the speediest server of its type and, yes, you can find Doom here.

URL ROULETTE

http://kuhttp.cc.ukans.edu/cwis/organizations/kucia/uroulette.html

You'll stumble across gems you'd otherwise never discover with this random navigator.

YOU ARE PEEPING TOM

http://133.38.149.19:80/=@=:maki.ke.ics.saitama-u.ac.jp/

This Peeping Tom camera excites with glimpses of the back of some Japanese computer boff's head. Or maybe it's an airconditioning duct. Wow, why don't we set it to music.

Government

CCTA GOVERNMENT INFORMATION

http://www.open.gov.uk/

This prototype offers relatively sketchy information but invites feedback about UK Government operations. There are also links to sites for the DTI and the National Rivers Authority, should you need them.

DEPARTMENT OF HEALTH

http://www.os.dhhs.gov/

The US Department of Health server contains useful information on finding your way through the US health service, plus public access information on topics such as cancer and Aids.

HER MAJESTY'S TREASURY

http://www.hm-treasury.gov.uk

Press releases, ministerial speeches, minutes and economic forecasts – you can subscribe to a mailing list to receive news and even read the budget. It has to be said that this is rather dull, but at least it shows the goverment is waking up to the existence of the good old 'information superhighway'.

I'M – EUROPE

http://www.echo.lu/

This home page, an initiative from the Director-General XIII of the EC, provides the WWW with information about Europe and the European electronic information market. There really is some rivetting reading here, including the much sought-after unexpurgated version of that classic of world literature, the Maastricht Treaty.

US BUREAU OF THE CENSUS

http://www.census.gov/

There are more statistics here about the United States of America and its citizens than you are ever likely to want to know. You can search the main database, read press releases, view the poster gallery, check the projected population clock, listen to clips from radio broadcasts or link to other serious info-head sites from the hotlist.

WELCOME TO THE WHITEHOUSE

http://www.whitehouse.gov

Have you ever used Bill Clinton as an extreme example of the type of person who uses the Internet? Well, here's proof that he actually does. It's easy to be cynical about this PR exercise, particularly the moribund guided tour of the Whitehouse and Hillary's page, but it does show the doors of democracy to be at least ajar. Most government departments can be accessed from a simple menu. Larrikins may even download Bill's welcome message for their windows start-up sound file. Best though, is the invitation to email the President and 'speak out', perhaps about his wife's page.

Health

DENTAL NET

http://www.dentalnet.com/dentalnet/

An online dentist complete with assurances that it won't hurt – if you live in Austin, Texas.

GUIDE TO WOMEN'S HEALTH

http://asa.ugl.lib.umich.edu/chdocs/womenhealth/womens_health.html

Abundant pointers relating to women's emotional, physical and sexual health – this site covers a wide range of topics such as partner violence, shyness, bulimia, dating, contraception and piles.

THE DRUG PAGE

http://cyborganic.com/drugz/

Links to information, e-zines, FAQs and experiences relating to drugs of all sorts.

THE VIRTUAL HOSPITAL

http://indy.radiology.uiowa.edu/VirtualHospital.html

The Virtual Hospital is a continuously updated medical multimedia database intended to provide patient care support and distance learning to practising physicians. This is a great resource with links to many online health books, medical journals, newsletters, surgery simulations and multimedia textbooks. The virtual patients area has case studies accompanied by graphically illustrated surgical walkthroughs.

Internet Tools

A BEGINNERS' GUIDE TO HTML

http://www.ncsa.uiuc.edu/demoweb/html-primer.html

A very long primer on HTML and an excellent one at that. It doesn't just explain the code, it gives style hints, troubleshooting advice and provisions for avoiding errors. Start here is you want to produce your own Web pages.

ARCHIE

http://web.doc.ic.ac.uk/archieplexform.html/

Archie is a popular way to search anonymous FTP sites for specific files. Any WWW client can do a simple search, but for full searches you need forms-compatible client software such as Mosaic 2.0 or MacWeb.

CELLO

http://www.law.cornell.edu/cello/cellotop.html

This is the home page for the Cello Internet Web browser for Windows. Cello is primarily a Web client, but also has built-in support for FTP, NNTP news, phone servers and Gopher. Optional utilities can be used to extend this to WAIS, Hytelnet, Telnet and Telnet 3270.

CERN

http://www.cern.ch

Cern, the European Laboratory for Particle Physics in Geneva, is the definitive source of information about the World Wide Web, which was initially developed by Tim Berners-Lee to aid collaboration in physics research, but has since seen far wider acceptance. This server contains a wealth of vital Web information, including the extensive WWW Virtual Library (see Libraries section).

CLEARINGHOUSE

http://www.lib.umich.edu/chhome.html

This guide provides links to subject-orientated Internet resources by providing a menu from which to start your search. It's like a stiffer, less attractive, version of Yahoo but is just as useful.

CUI INDEX

http://cui_www.unige.ch/w3catalog

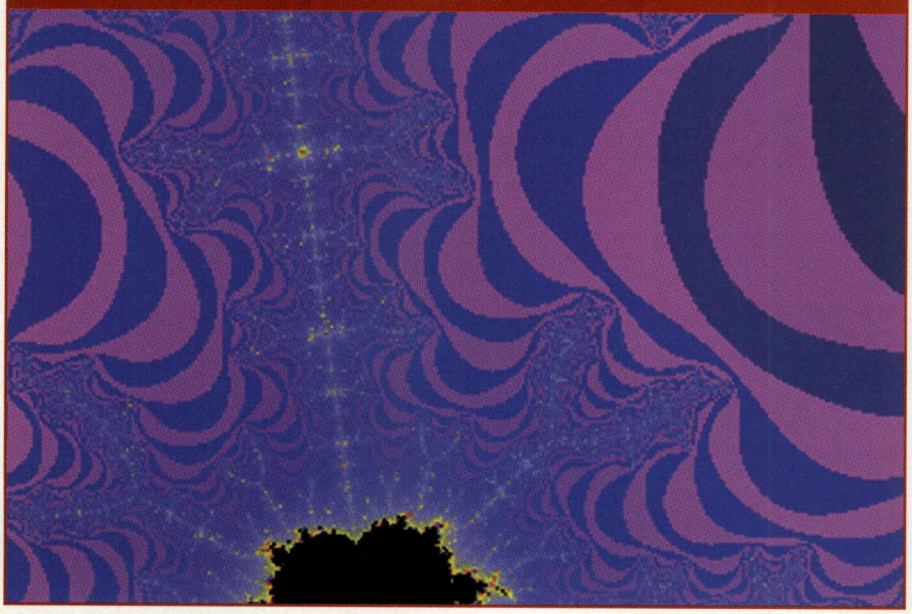
Excellent textual browser maintained by the Centre Universitaire d'Informatique in Geneva which allows you to search several Web catalogues to produce detailed links. The catalogue currently contains 12,308 entries.

GLOBAL NETWORK NAVIGATOR

http://www.gnn.com

Make this top Web server an essential addition to your hotlist. From deep in the heart of Californian wine country, GNN has carefully organised links to a host of useful places. This includes access to the inimitable Whole Internet Catalogue, a large classified directory of what's on the Web, Digital Drive In, a section about movies, and NetNews, a weekly roundup of Internet news. The Market Place, a growing source of commercial practices setting up on the

NEW



Chaotic but mathematically correct

FRACTAL EXPLORER

http://www.vis.colostate.edu/~user1209/fractals/mandel.html

A fractal is a complex self-similar and chaotic mathematical object which reveals more detail as you zoom in. You can explore the most famous example of these, the Mandelbrot set, by changing the colour palette and zooming in by clicking on the image. Even if you can't understand how this complex iteration works, you can still generate wild graphics.

What's on

Internet, What's New, and the excellent Personal Finance section are also well worth a regular scan.

GRAPHICS FOR YOUR PAGES

http://www.rfhsm.ac.uk:70/0/people/gifs/index.html

Useful paragraph dividers, icons, arrows, buttons and dingbats for Web page design. Rather than copying the picture file directly into your HTML directory, you refer to each image's unique URL.

HARVEST

http://harvest.cs.colorado.edu/

Another excellent WWW keyword browse and search tool with less duplication than others such as Lycos and the WWWW. The reference database is collated from content summaries, anchors and HTML strings and contains over 22,000 WWW home pages. Make sure this is in your toolkit.

HOMEPAGE PUBLISHER

http://www-bprc.mps.ohio-state.edu/HomePage/

Here's a chance for you to try your hand at page publishing. This service lets you create your own page using a forms-based HTML editor. Pictures can be imported by reference to another URL but best of all it's free. What more could you ask for?

LYCOS DATABASE

http://fuzine.mt.cs.cmu.edu/

This massive index maintained by Carnegie Mellon University is the best place to start a Web search. This Web crawler generated index searches, document titles, headings, links and keywords, usually returning more hits than any other tool. Whether they will be useful ones is another matter, though.

LYNX

Telnet: millbrook.lib.rmit.edu.au (login: Lynx)

A virtual library maintained by the Royal Melbourne Institute of Technology in Australia, providing hypertext access to the Web using the Lynx browser. This features a textual rather than graphical interface, making it very like a gopher menu, except with the click-on links expected from Mosaic.

CHOICE

A slice of life in the name of science

THE VISIBLE HUMAN PROJECT

http://www.nlm.nih.gov/extramural_research.dir/visible_human.html

This project generated a lot of publicity, not just for itself but for the Internet's proliferation as a visual teaching aid. What really caught people's attention, and what isn't mentioned here, is that this visible human is the thinly sliced frozen body of an executed serial killer. The image database consists of almost 2000 CT scans obtained by sectioning the body into 1mm thick fillets and capturing a digital colour image at every level. The intention is to use this as a teaching application for identifying anatomical structures or visualising the full motion of the human form using supercomputer modelling – it's fascinating but gruesome.

NCSA

http://www.ncsa.uiuc.edu

This essential site is the home of Mosaic, the most widely used Windows and Macintosh-based Web browser. It has the latest versions of most Mosaic-related tools including the GIF and JPEG viewers and multimedia players, along with documentation in varying degrees of complexity.

NETIZENS

http://gnn.com/cgi-bin/imagemap/HOME?62,341

Create a link to your own home page or browse this GNN list by name and choose one randomly – it's a bit of a lucky dip.

NETSCAPE

http://home.mcom.com/home/welcome.html

This is the most complete set of Internet resources accessible from one site anywhere on the Web, making it a great default home page, and the warren of pointers to browsers, gophers, virtual maps, catalogues and directories will probably have you lost underground for hours. Tutorials range from getting started through to designing your own pages. What's New is well-researched, updated daily and an essential browse, but as a shortcut to the eccentric and bizarre, even better is the list of cool sites.

NEWSGROUPS IN OXFORD

http://www.lib.ox.ac.uk/internet/news/

This automatically compiled list works like a gopher menu and allows you to browse news FAQs accompanied by brief descriptions. However, you'll need to configure your WWW client to point at a suitable NNTP server to take advantage of the hyperlinks.

PUBLISHING ON THE WEB

http://www.webcom.com/html/

This guide to preparing your own pages isn't bad, especially if you are compelled to do it all from first principles. It goes into great detail explaining the code, its uses and its limitations. Fortunately there are an increasing number of compilers, forms and software extensions becoming available, which can automate a lot of the hard work.

SPRY

http://www.spry.com

Home of the first commercial version of Mosaic and Internet in a Box.

THE INTERNET SOCIETY

http://info.isoc.org

This organisation, with both corporate and private members, coordinates the development of standards and codes of conduct for the Internet. There's detailed information about its activities and an encyclopaedic collection of information on the Internet's development. However, pages should be updated more often to set a better example.

THE INTERNIC

http://www.internic.net

InterNIC provides information on Internet access, use and network connection. This service is provided by heavyweights

What's on

AT&T, General Atomics and Network Solutions and it's a very useful starting-out point for beginners.

THE REVOLVING DOOR

http://www.galcit.caltech.edu/~ta/cgi-bin/revdoor-ta

You can add your favourite URL, delete a URL or visit one already on the menu. This makes it an ever-changing and quasi-democratic hot list maintained entirely by visitors.

TODAY'S COOL SITE

http://www.infi.net/cool.html

If your site is listed here it will guarantee a traffic surge of at least a few thousand.

UK INTERNET LISTS

www.tardis.ed.ac.uk/~paola/inetuk/

This is the best set of UK Internet resource lists you will find anywhere. If you're shopping for a connection, you can compare Internet access provider's details here, and then link to their home pages. There are lists of Internet consultants, training courses, publications and a hotlist chock full of links to useful information, guides, tools and services.

VERONICA

Gopher: gopher.scs.unr.edu

Veronica (Very Easy Rodent-Oriented Netwide Index to Computerised Archives) allows key word searches of Gopher menus.

WHO'S WHO ON THE INTERNET

http://web.city.ac.uk/citylive/pages.html

Not what you'd think, but the WWW Virtual Library's directory of individual home pages. Add your own, using the form, if you think you'll be heard above the noise.

WORLD WIDE WEB SERVERS

http://info.cern.ch/hypertext/DataSources/WWW/Servers.html

You have the choice of sensitive map or hypertext link to search for servers in this regionally sorted list. It's great for finding country-specific information or just surfing your way around the globe.

WORLD WIDE WEB WANDERER

http://www.mit.edu:8001/afs/sipb/user/mkgray/ht/web-growth.html

Apart from cryptically coded statistics on Web growth, this site provides links to 1265 http sites, sorted by country. However, other than the site code, no other information is supplied, so it's a bit like throwing a dart. However, it's useful if you're after regional information or just want to browse randomly.

WWW VIRTUAL LIBRARY

http://info.cern.ch/hypertext/DataSources/bySubject/Overview.html

The extensive WWW Virtual Library is a powerful search tool that allows you to find information on almost any of the world's Web servers through user-friendly key word searches. This is a vital address to add to your hotlist.

WWW WORM

http://www.cs.colorado.edu/home/mcbryan/WWWW.html

Based at the University of Colorado, this server offers several good ways to search the Web. The examples given show users how to search with multiple references.

YAHOO

http://akebono.stanford.edu/yahoo

This is another indispensable addition to your browsing toolbox. Apart from the excellent menu-based browser, there are links to new, cool and popular sites. Menus may be several layers deep and can hyperlink you to Web sites, gophers, news and FTPs. You can now also search by keyword or add your own URL. Some sites are rated and new entries are tagged to give you additional guidance.

ZEN AND THE ART OF INTERNET

FTP: ftp.csn.net/pub/net/zen

A free ASCII or Postscript version of this book can be obtained from this FTP site, and it certainly makes excellent reading if you wish to find out more about the Internet, including such topics as TCP/IP and domains.

Law

BENTHAM ARCHIVE OF BRITISH LAW

http://www.server.bcc.ac.uk/~uctlxjh/Bentham.html

Access to University College London's legal archives, plus pointers to other legal wells. There are also particular sections on criminal and property law, Usenet threads and essential lawyer jokes. The criminal law area even has a section on general defences – how to get away with it, once you're caught.

INTERNET USER DETAINED

http://raptor.sccs.swarthmore.edu/jahall/dox/freakout.html

This is a first-hand account of police surveillance of Net postings. This user requested advice on suicide drugs and wound up in the lock-up for two days.

WEST'S LEGAL DIRECTORY

Gopher: 163.231.231.3

Profiles of more than 500,000 attorneys and law firms in the USA. No lawyer jokes here please!

Libraries

BRITISH LIBRARY

Gopher: gopher.bl.uk

A gopher-based pilot service which provides a marked contrast to what's on offer from the US Library of Congress. This service, dubbed Portico, has information about how the library is organised, how to use it and a notice board.

EDUCATIONAL TEXTS

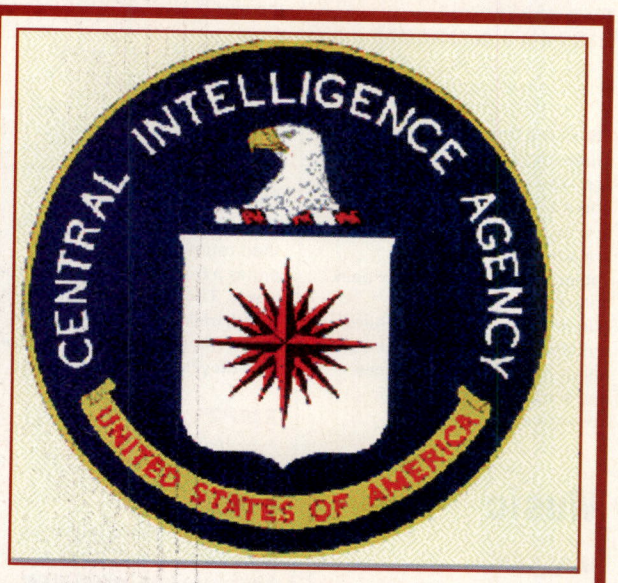
Gopher: etext.archive.umich.edu

This archive contains hundreds of thousands of words, ranging from the complete works of Shakespeare to the script of a lost episode of Star Trek. Only pornographic images are banned. Consequently, users are warned they may find some of the material offensive. Despite fairly extensive trawling, the most offensive stuff seen so far was some truly appaling poetry. This site can also be accessed via FTP at the same address.

LIBRARY OF CONGRESS

http://lcweb.loc.gov/homepage/lchp.html

An attractive colourful front-end which is slow to load but worth



CENTRAL INTELLIGENCE AGENCY FACTBOOK ON INTELLIGENCE

http://www.ic.gov/facttell/toc.html

Find out about the CIA's role in international affairs, your rights and plenty of other public information. But that's not what you're after is it? You want to know about political assassinations, spy satellites, conspiracies, bugging, government-sponsored alien sex cults and the X files. You must have the wrong CIA.

What's on

the wait. Apart from the US Government information and reference library sections you'd expect, there are electronic versions of recent exhibitions at the library – complete with photographs and illustrations. There are also pages of the Global Electronic Library currently under construction.

VATICAN LIBRARY

http://www.ncsa.uiuc.edu/SDG/Experimental/vatican.exhibit/Vatican.exhibit.html

Visit several virtual 'rooms' in the Vatican, including a library, a music room and a nature room.

Museums

THE EXPLORATORIUM

http://www.exploratorium.edu

This is a great attempt to bring a museum online. There are practical details, plus attempts to bring to life some of the San Francisco Exploratorium's 650 interactive exhibits, from a 'duck into' kaleidoscope to the Ames room (it has no square corners). To get the full effect of the Exploratorium pages, your system needs to support the JPEG picture compression standard.

THE NATURAL HISTORY MUSEUM

http://www.nhm.ac.uk/

The is the first major UK museum to enter the Internet age. You can find out more about the museum's activities, events and timetables and there are a few pictures. Not a substitute for a visit, but a peek behind the scenes is nonetheless of interest. There are also links to other sources about the earth, life sciences and the Walter Rothschild Zoological Museum.

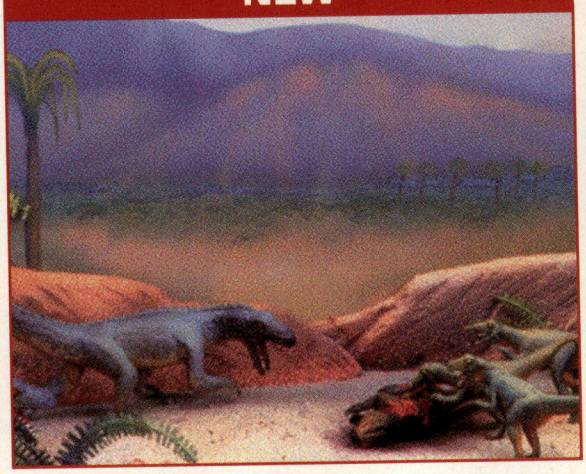
Music

BEATLES

http://bazaar.com/Beatles/

This is another fun page from the house that brought you Megadeth. It's not the usual clips, discography and tour dates-type service. Instead, you can send Beatles postcards, telnet into a Beatle chat session, read about the new Live at the BBC release, hear various vocal samples, enter sweepstakes and indulge in a host of other Beatles trivia. As with the Megadeth server, it's well designed, looks great and you don't have to be a fan to enjoy the site.

NEW



Don't be a dinosaur

FIELD MUSEUM OF NATURAL HISTORY

http://www.bvis.uic.edu/museum

This Chicago museum has placed a multimedia tour of its DNA to Dinosaurs exhibition on the Internet and you can page through the eras, downloading movies and sound bites as you go. There's also a display of Javanese masks and more online collections of artefacts are on their way. *Jurassic Park* fever may have died down but this is definitely one to show the kids.

CYBERSIGHT HOT URL MUSIC LIST

http://cybersight.com/cgibin/cs/nnnn/MusicZZZ56A1

This page allows you to hyperlink to a music page and then return and rate it with either a thumbs-up or a thumbs-down. There's about a hundred listed, including the Buzzcocks, Bjork, Ministry, the Orb, Sisters of Mercy, Morrissey and more.

EMPTY TV

http://www.galcit.caltech.edu/~ta/mtv/main.html

A parody of Music Television (MTV) and Adam Curry's Metaverse (see below). It can, however, be hard to get on to.

HYPERREAL

http://hyperreal.com/

Techno/ambient/rave archives featuring reviews, lists, publications, drug discussions, tools and shareware, sound samples, DJ sets, FAQs and links to other sites.

INDUSTRIAL MUSIC

http://www.eecs.nwu.edu:80/~smishra/Industrial/

If you want to volunteer to take over or help with this site you'll be greeted with open arms. That's if you're into the likes of Einstürzende Neubauten, Negativland, Skinny Puppy, Cabaret Voltaire and Ministry.

IUMA

http://iuma.southern.com

It's a good idea to choose the dull textual mode wherever possible on this graphically intensive site. Indexing is not as efficient as it first appears and you will be lucky to find much that's familiar. What you will discover is a treasury of audio clips by new talent. This site is the European mirror (technical term which means a sort of localised copy) and should eventually develop a more Euro-beat flavour.

JAPANESE INDEPENDENT MUSIC

http://www.atom.co.jp

The exploding, yet unfamiliar Asian pop scene may not be the next big thing, but it may just be the next big thing after that. Watch this spot.

JOHN PEEL'S PLAYLISTS

http://www.bbcnc.org.uk/bbcv/radio1/JPeel_top.html

See them here two years before they chart in the UK and 15 years before Rolling Stone catches on.

MEGADETH, ARIZONA

http://www.bazaar.com

Even if you're not a fan of heavy metal band Megadeth, this site is a fine example of superlative HTML design. What's really smart about these barbed wire-capped pages, and something every designer should note, is the bottom menu bar which travels with you and lets you know where you've been. There's plenty for fans, a terrific set of screensavers featuring Megadeth animations and sound bytes, Troma Films' pages (makers of such classics as The Toxic Avenger and Chopper Chicks From Zombie Town), horoscopes, Megadeth archives and merchandising. Prepare yourself.

METAVERSE

http://metaverse.com

A US music and entertainment service that acrimoniously grew out of MTV (MTV sued to get the exclusive use of the domain name mtv.com, the previous name for the Metaverse Service). There's a range of sections of information about concert tours, new releases, videos, and unsigned bands promoting themselves. This service has become more commercial recently, with reader offers and shopping being added to the mix.

MUSIC RESOURCES ON THE INTERNET

http://www.music.indiana.edu/misc/music_resources.html

You'll be overwhelmed by the quantity of music-related sites featured here. They're split into academic, non-academic, user-maintained, geographically local sites and artist-specific sites. These are further split into WWW, gopher, telnet and FTP divisions.

MUSICBASE

http://www.elmail.co.uk/music/

This database features news on the UK music scene and showcases such talents as the Stone Roses, Human League,

PWEI, Terrorvision, Blur, Eternal, Positiva and Kickin' Records. It's expanding rapidly and should develop into a great site.

NETTWERK PRODUCTIONS

http://www.wimsey.com/nettwerk/

Home to progressive fringe artists like Single Gun Theory, Severed Heads, MC 900 ft Jesus, Sarah Mclachlan, Consolidated and the Falling Joys. Not all have the own page yet, but watch this site as it often finds a sound before the mainstream.

NW2NOISE

http://www.maires.co.uk:80/nw2n/

Great noise-orientated indie showings from the likes of Bumgravy, Headbutt, Free Kitten, Guv'ner and Huggy Bear.

PLANET STARCHILD

http://www.mcs.com/~bliss/starchild/home.html

A surprisingly business-like board covering the entire constellation of indie music. Some of the featured artists offer downloadable self-running promo kits for you to sample.

REM

http://www.halcyon.com/rem/index.html

If you think REM are dull, this collection of FAQs, lyrics, guitar chords, photos, articles and links to other archives is unlikely to change your mind. File next to Renee & Renato and REO Speedwagon.

ROLLING STONES

http://www.stones.com

Set up to promote the Stones' recent *Voodoo Lounge* album and tour, this features tour dates, text and video interviews with the Stones. This was the site of the autumn 1994 live Internet concert broadcast which, although not a critical success, was a brave foray. However, in the time it takes to deliver the Quicktime movies down even a fast modem, you could form your own R&B band.

STEREOLAB

http://www.maths.monash.edu.au/people/rjh/stereolab

Discography, samples, news, interviews, reviews, pictures, T-shirts and tour dates from the UK's finest 'groop to play space-age batchelor music'.

SUB POP RECORDS

http://www.subpop.com

Mail order and archives from the cheery Seattle home of the sadly defunct Nirvana, Mudhoney and their ilk.

Nature

ARBORICULTURAL STUFF

http://www.sccs.swarthmore.edu/~justin/Docs/arbor.html

Guidelines for tree pruning.

BRITISH TREES

http://www.u-net.com/trees/home.htm

A guide to native British trees referenced by common or Latin names. There is plenty of information but no pictures.

COW HOME PAGE

http://netvet.wustl.edu/0n:\cows.html/

A rich collection of pointers to bovine resources all over the Web, including futures spreads, dairy software, animal evaluation, body condition algorithms and health papers.

COWS CAUGHT IN THE WEB

http://www.brandonu.ca/~ennsnr/Cows/Welcome.html

A slightly perplexing attempt to find humour in the holiest of all beasts.

ENTOPLATH

http://www.msstate.edu/Entomology/ENTPLP.html

This server at Mississippi State University features news, course outlines and publications on entymology and plant pathology. It provides links to newsgroups, newsletters, similar servers and the site at the Mississippi Entomological Museum.

NETVET VETERINARY RESOURCES

http://netvet.wustl.edu/

Links to veterinary resources such as the Electronic Zoo, NetVet Gopher server, NetVet WWW server and the Veterinary Medicine page of the WWW Virtual Library.

THE ELECTRONIC ZOO

Gopher: netvet.wustl.edu:70/11n%3A/e-zoo

A gopher list of resources related to all fauna. As with all gopher menus, it may lead you all over cyberspace before you find what you're looking for and despite the name it's not a virtual zoo with animations and soundbites. However, if one arrives you'll probably be able to find it here.

THE ENVIROWEB

http://envirolink.org

Very impressive at first sight, the EnviroWeb claims to be the largest online environmental information service on the planet. All sections boast the prefix 'enviro'; there's an EnviroFreenet, an EnviroForum, an EnviroNews service and so on. Some of these areas are still under construction but there's a mass of information already there. An essential spot if you're interested in the environment.

THE ROYAL BOTANIC GARDENS, KEW

http://www.rbgkew.org.uk/

This server forms part of the RBG Kew's mission to ensure better environmental management by increasing botanical understanding. There's not a lot here yet, other than information on poisonous plants, links to similar servers and details of mailing lists.

News

CNN NEWS

Gopher:info.umd.edu:925/11/

These up-to-the-minute snippets are little more than headlines from CNN's stories of the day.

IGC HEADLINE NEWS

Gopher:gopher.igc.apc.org/11/headlines

Ecologically-aware news gopher service from the Institute for Global Communications. Stories cover issues such as nuclear testing, refugees, corruption and Third World crises.

THE VOICE OF AMERICA

Gopher:ftp.voa.gov/1

As far as free online news goes, this one from the Voice of ▶

NEW

Egyptian ambiance

RA HOME PAGE

http://iuma.southern.com/RA/

If you look further down the IUMA server, you'll find Ra, which calls itself an authorised E-zine of E-zines. The aim is to attract as many artists, bands and labels as possible in the ambient/experimental/trance/techno world and bring them together as individual sites. Highlights are the Hydrogen Duke Box and Mix Master Morris, international cheerleader of the ambient underground. The graphics are colourful Egyptian-style hieroglyphics and, although they're rather large, it's definitely worth the wait while they load. All sorts of new and eclectic stuff is likely to emerge here in the near future and more sub-sites, sound samples and MPEG videos are promised.

What's on

America is quite good. You get daily feeds from stories broadcast on its international shortwave network, as well information about its other media activities.

TIME DAILY

http://www.timeinc.com/time/daily/time/latest.html

Daily news shorts from US Time, some with hypertext links to further information. These bulletins are concise but deliver the day's main international stories on one page.

UNITED NATIONS NEWS

http://nearnet.gnn.com/gnn/meta/travel/res/newsgath.html

This Gopher covers news of the United Nations' involvement in international affairs. This service is updated five times per week.

Politics

BLACK INFORMATION NETWORK

http://www.bin.com

This is the site of a non-profit organisation concerned with the African-American community.

FEMINIST ACTIVIST RESOURCES

http://www.clark.net/pub/s-gray/feminist.html

This site has hundreds of links to forums, articles, political action groups, legal documents, news items, feminist fun and games, women's organisations, counselling services and other topics of interest to feminists.

FRIENDS OF THE EARTH

http://www.foe.co.uk/

You can find out about Friends of the Earth's latest campaign, your nearest group, results of environment studies or how to join forces. There's also plenty of links to other environmental resources and groups.

GREENPEACE INTERNATIONAL

http://www.greenpeace.org/

The home page of the head office of Greenpeace International, located in Amsterdam. This site has links to its environmental library in Canada, its Ozone Campaign, information on environmental treaties, a photobook, green Gophers and other environmentally aware resources.

NEW

Take your partners

DEAD CAN DANCE

http://www.nets.com/dcd

If you haven't been exposed to the hauntingly beautiful music produced by the UK gothic group Dead Can Dance, here's your chance. There is a 15-second cut from every song in the band's eight-album history, as well as the usual biographies and details of up-and-coming tours.

PALESTINE INFORMATION

http://www.alquds.org/

This server promotes the Arabic culture and the Palestinian situation. It provides its own Middle Eastern resources guide, with advice on mailing lists, news services and Internet resources, and links to many Arabic gophers and Web pages.

SPUNK PRESS

http://www.cwi.nl/cwi/people/Jack.Jansen/spunk/Spunk_Home.html

This page from Spunk Press, an electronic publisher of anarchist literature, acts as an index to anarchist resources around the Web, including a mass of subversive writing. It may seem paradoxical to find anarchists so well organised, but it adds up to an attack on capitalism rather than organised government. Some pieces earnestly recommend schoolboy mischief like sugaring police car fuel tanks, having sex in government offices and defecating in mailboxes as methods of political agitation. With notable exceptions, such as the works of Chomsky, this a dated, deluded, impractical and retrogressive compilation.

Publications

AMERICAN DEMOGRAPHICS

http://www.gems.com/marketing/american_demographics/index.html

A taste of the sort of marketing data and sociological analysis you can expect to get when you subscribe to American Demographics.

CASPER STAR TRIBUNE

http://www.trib.com

Unless you are interested in Casper, Wyoming, this will be more interesting for its feeds from Time, VOA and CNN and its great travel and finance links.

CENTER FOR CIVIC NETWORKING

http://www.earthweb.com:8000

This US organisation helps community and non-profit groups exploit the Internet's potential for low-cost publishing.

CHINA NEWS DIGEST

http://www.cnd.org/

This site houses access to several Chinese language publications, scenic pictures, Chinese home pages and information pertaining to China and the Chinese international community.

CHRONICLE OF HIGHER EDUCATION

http://www.chronicle.merit.edu

Web adaptation of a US academic weekly, including the job ads.

E-ZINE-LIST

http://www.ora.com:8080/johnl/e-zine-list/

Probably the longest list of electronic magazine links available on the Web. Unfortunately there are no attached descriptions so unless the title is self-explanatory it's a hit or miss affair.

ELECTRONIC JOURNALS

http://info.cern.ch:80/hypertext/DataSources/bySubject/Electronic_journals.html

A listing of magazines and periodicals available via the Internet, including links to either details or the full text of the publications. Those mentioned range from 3W, the UK-based global network newsletter, to the Electronic Green Journal and USA Today. The file is extensive but users are asked to send news of additional titles. There is also some useful info about using the Net.

ELECTRONIC NEWSSTAND

http://enews.com

One of 1994's most highly publicised Internet businesses, the Electronic Newsstand was set up as a browsing medium for users who may want to buy subs to magazines. After you've selected a periodical or journal from the main menu, you'll be launched into gopherspace, which can often mean a bit of trial and error to find anything interesting. Each publication has a mission statement, subscription offer, current issue details including contents, and at least one complete article plus archives.

ELSEVIER SCIENCE

http://www.elsevier.nl

Elsevier claims to be the world's leading supplier of scientific information. On board is a comprehensive list of journals, publications and multimedia products, plus news of forthcoming releases, along with reviews and ordering facilities. Links include an excellent science Gopher and the WWW 94 conference proceedings.

FACTSHEET FIVE – ELECTRIC

http://kzsu.stanford.edu/uwi/f5e/f5e.html

Home to weird e-zines such as *Addicted To War*, *Tarot News* and *Psychotronic Video*.

FORTEAN TIMES

http://forteana.mic.dundee.ac.uk/ft

Fans of improbable phenomena will relish every entry in this taste of the UK magazine *Fortean Times*. Read about spontaneous combustion, alien sex-beasts, flying saucers, zombies, Uri Geller and surfing to the stars on warped space. Highlights of the last 20 years include bizarre photographs such as the 'magnetic man' and the 'kitten with wings'.

FREE INTERNET NEWS SOURCES

http://www.helsinki.fi/~lsaarine/news.html

This guide from the University of Helsinki in Finland offers a veritable smorgasbord of free lunches courtesy of the Internet's news providers. We love that word free, but ultimately you'll need to pay to receive the quality you've come to expect from other media.

GAZETTA ONLINE

http://info.fuw.edu.pl/gw/0/gazeta.html

An experimental edition of Poland's biggest daily, in Polish.

INTERNET UNDERGROUND

http://www.engin.umich.edu/~jgotts/underground.html

This site, while disclaiming illegal encouragements, compiles detailed information on phone tampering, encryption, hacking and the hacker subculture. Even if you have no intention of trying out any of these schemes, it can provide you with an illuminating insight into the mindset of hackers and a better understanding of communication networks.

INTV SINGAPORE

http://www.ntu.ac.sg/intv/intv_www.html

If you're running Windows you can register to receive a free Teletext viewer to run in conjunction with Netscape. Other users can choose the slower Dynamic conversion service, which is just like ye olde Teletext - slow, undetailed and full of spelling mistakes – but it's live, free and once you've sorted out which page you want, it can deliver the facts.

NETSURFER DIGEST

http://www.netsurf.com/nsd/index.html

Subscribe and receive a weekly free list of reviewed Web sites written in either HTML or plain text. Current and back issues are also available online. It's better to subscribe to the HTML version as Netscape can take advantage of its links. Netsurfer Marketplace, the online shopping mall, can also be reached from this address.

NSF NETWORK NEWS

http://www.internic.net/newsletter

A free newsletter about the evolution of the Internet available in hard copy and electronic formats.

PALO ALTO WEEKLY

http://www.service.com/PAW/home.html

The online version of a free paper covering Palo Alto. Outsiders will find format more interesting than content.

PATHFINDER

http://www.timeinc.com

The richest of all publishing pages, this has not only useful links but real, free products on display. *Entertainment Weekly*, *Time Magazine*, *The Complete Garden Encyclopedia*, *Money Watch* and *Vibe*, to name but a few, are all here. This a handsome site, with no hard sell, just goodwill.

PHRACK MAGAZINE

http://freeside.com/phrack.html

First published in 1985, Phrack magazine has printed controversial and often anarchic articles for the hacker community. You can download or browse back issues and subscribe free to the quarterly.

PSYCHE JOURNAL

http://hcrl.open.ac.uk/psyche/psyche

An electronic interdisciplinary journal of consciousness research with articles, commentaries and book reviews on such subjects as vagueness, semantics, the language of thought and delineating conscious processes. When you've figured that lot out, you can try the links to other philosophical Gophers.

SKEPTICS SOCIETY

http://www.primenet.com/~lippard/skeptics-society.html

The Skeptics Society, the private organisation of the intellectually ▶

URBAN DESIRES

http://desires.com/desires/ud/1.1/urban_toc.html

Billing itself as an interactive magazine of metropolitan pleasures, this glossy modern e-zine really delivers. It has well written modern city stories on technology, eating, sex, music, art, performance, style, politics and more. There's even a lengthy gruesome comic strip which, despite its graphic detail, loads quite quickly due to a clever three-part download. If you're thinking of publishing comics or graphics on the Internet, don't miss this site.

What's on

curious, investigates the pseudosciences, paranormal and claims of fringe groups. At this site, you can subscribe to the magazine, order books and tapes, read newsletters and find out what's new in the world of scientific enquiry.

TECHWEB

http://techweb.cmp.com/techweb/default.html

It's a cramped messy looking home page but dig into the news search and you'll be astounded at how much technical and computing information is available. Apart from that you can browse through publications and even subscribe if you wish.

TELETIMES

http://www.wimsey.com/teletimes.root/teletimes_home_page.html

An ambitious free monthly from Vancouver, this invites (and needs) free contributions. In each themed issue, it has the odd interesting article, amongst more ordinary stuff. It's so well-presented, it is a pleasure to flick through, but as is often the case, it is the potential that is most exciting.

THE ELECTRONIC DAILY TELEGRAPH

http://www.telegraph.co.uk

To access this great free service, you'll first need to register for a pin number. Once in, the information available makes an acceptable alternative to print, except for the agonisingly slow response times. Unless the problems caused by the slow server, heavy graphics and deep menus can be rectified, most will turn away after a cursory scan.

THE ETEXT ARCHIVES

http://etext.archive.umich.edu/

An archive of electronic magazines which you can gopher search by name or title.

TRAVELS WITH SAMANTHA

http://martigny.ai.mit.edu/samantha/travels-with-samantha.html

This was one of the winners in the Best of Web 1994 Awards, mainly due to the 250 quality photographs of landscape, wildlife and young women, rather than Philip Greenspun's North American travel writing.

THE VIRTUAL GARDEN

http://www.timeinc.com/vg/Welcome/welcome.html

This splendid set of horticultural resource is being constructed by Time Life, which intends to create the most comprehensive guide to gardening online. It's already that, and it's still under construction. There are links to plant society magazines, special interest newsletters and gardening monthlies, all with interactive capabilities for editorial feedback and shopping. Parts of the new series *The Complete Gardener* are on show, including a searchable database which will recommend plants suitable for your soil, zone, climate and preferred specifications.

WEB NEWSPAPER LIST

http://www.jou.ufl.edu/commres/webjou.htm

This site has links to various US educational and experimental publications. For example, the San Franciscan Gate is particularly good, allowing key word searches through well-written back issues. Polish, Italian, Russian and Dutch Teletext also appears here but there is nothing from the UK as yet.

WIRED

http://www.wired.com

Until recently, the world's hippest publication, a style magazine about technology, delivered some of the world's dullest Web pages. Now, though, Wired is steadily evolving its electronic product into HotWired. Keep checking on this one because it's getting better and better all the time, and the title itself is soon to be distributed here in the UK by the *Guardian*.

Radio

MONITOR RADIO

http://town.hall.org/radio/Monitor/index.html

Home page of the Christian Science Monitor which many regard as the USA's most unbiased news, reporting and cultural analysis service. The usual program schedules, feed times and background is available, as well as past highlights in audio file format. The big news is that a 24-hour Internet audio multicast channel is planned.

NHK RADIO JAPAN

http://www.ntt.jp:80/japan/NHK/

Broadcasting schedules, timetables, propagation maps and information in an impressive 22 languages.

RADIO STATION WXYC

http://sunsite.unc.edu:80/wxyc/

This is the site of the first real-time radio station on the Internet. This page explains how to connect, what software you will need and gives broadcast details. You can pick up the software by FTP at this site. Reception quality is dependent on a number of factors, particularly the system demand. If the signal is bad, try later, preferably not in US peak hours. If you have a fast connection, you can listen to the music as background while you go about your other tasks, even surfing to other sites.

Real Estate

ESTATE AGENT

http://www.gems.com/realestate/index.html

Fancy moving to South Africa? That spare 4,250,000 Rand will come in handy to purchase a rather bijou little thatched cottage that's on offer there. Unlike their honest and straightforward counterparts in the UK, these realtors are unconstrained in their prose. Unfortunately, only three of the nine bedrooms are en suite and only two of the four garages have automatic doors, so this

property couldn't exactly be called luxurious and you might want to look elsewhere. There are some nice photographs, though, in each room.

WORLD REAL ESTATE LISTING SERVICE

http://interchange.idc.uvic.ca/wrels/index.html

A free service for buying and selling real estate in North America and Europe.

Reference

ARTFL PROJECT

http://tuna.uchicago.edu/ARTFL.html

This extraordinary exercise in extreme francophilia provides various French language and literary databases and utilities.

COMPUTING DICTIONARY

http://wombat.doc.ic.ac.uk/

In theory you can search here for a definition of any computing term or acronym. However, as you will find out, the language evolves all too frequently.

HOW TO SAY ORNERY

http://xmission.com/~jonyag/ornery.html

Indispensable pronunciation guide with audio coaching.

HUMAN LANGUAGES

http://www.willamette.edu/~tjones/Language-Page.html

A rich digest of links to linguistic resources such as dictionaries, thesauruses, poetry, publications and more in just about any language you can name, including Australian Aboriginal dialects, Esperanto, Hebrew, Manx Gaelic and Vietnamese.

RASTA/PATOIS DICTIONARY

http://www.willamette.edu/~tjones/languages/rastalang.html

Rasta/Patois-to-English translations.

WEBSTERS

http://c.gp.cs.cmu.edu:5103/prog/webster

Stuck for a definition of a word? The Websters Web site contains an online version of the famous dictionary. Key in the word and the comprehensive definition will be promptly returned – if it's available. Unfortunately you'll need to know how to spell it.

Religion

ABOUT WITCHCRAFT

http://www.crc.ricoh.com/~rowanf/COG/iabout.html

Definitions, basic philosophy, FAQs, general practices, holidays and other information from the Covenant of the Goddess (people who call themselves witches).

ANGLICANS ONLINE!

http://infomatch.com/~haibeck/anglican.html

This page produced by the Anglican Church of Canada shows more concern for the modern relevance of Christianity than for reinforcing the scriptures unchallenged. As such, you can follow discussion of issues raised by Anglican youths complete with the responses of the clergy. There is a debate about homosexuality and the role of women in church affairs, plus links to related resources such as the Pope's view of the role of computers in the church, Biblical contradictions and religious material from all denominations.

CATHOLIC RESOURCES

http://www.cs.cmu.edu:8001/Web/People/spok/catholic.html

Scripture, liturgy, early writings, Vatican documents, papal encyclicals, pronouncements, books, links and other resources of interest to Catholics.

CONFESSION BOOTH

http://anther.learning.cs.cmu.edu/priest.html

No, that's not on the menu, but I'm sure they'll add it soon. As penance, eat a cold bucket of chips while sitting through a Madonna Film Festival, and then teach your parents how to debug machine code with Lou Reed's Metal Machine Music at full volume in the background.

GLOBAL JEWISH NETWORKING

http://www.huji.ac.il/WWW_JEWISHN/www/t01.html

Links to Jewish resources such as libraries, museums, conferences, FAQs, Usenet news groups, student groups, reading lists and useful support for Hebrew software.

ISLAMIC RESOURCES

http://latif.com/

Gopher links to Islamic resources such as the Cyber Muslim guide, FAQs, guides to Islam, announcements, conferences and social events, Qu'ran teachings and news from the Arab world.

NETWORK FOR JEWISH YOUTH

http://www.ort.org/anjy/anjy.htm

This network links up to the offices of the All Jewish Youth organisation in order to provide Jewish and Israeli educational resources.

RELIGIOUS AND MULTIFAITH SITES

http://www.crc.ricoh.com/~rowanf/religion.html

This page points to many other religious pages, Gophers, resources and FAQs. In addition you will find many references to pagan, magical and occult sources on the Internet.

SNAKE OIL

http://fender.onramp.net/~analyst/snake/Snakeoil.html

A less than reverent guide to 'Kooky Kontemporary Kristian Kulture'. Mmm.

THE BIBLE GATEWAY

http://www.calvin.edu/cgi-bin/bible

This gateway lets you search the Bible as a database by textual references or by passage. You can also use it to turn scripture references into hyperlinks in your own documents by referrring to the gateway in your HTML code.

Science

CHICAGO UNIVERSITY PHILOSOPHY

http://csmaclab-www.uchicago.edu/philosophyProject/philos.html

This is a forum set up to mediate the scholarly discussion of philosophical works. You can join in and voice your opinions on such vital subjects as Nelson Goodman's theory of metaphor, the language of thought hypothesis, counterfactuals and Kripke. It's all fairly basic really

CHOICE

SHORTWAVE RADIO CATALOGUE

http://itre.uncecs.edu/radio/

This is the best organised and most information-rich of the many shortwave/amateur radio sites. The database will tell you what's on at any time, where and when you can receive broadcasts and how to convert between time zones. There are logs, station ID clips, maps, news, satellite information, propagation, sunspot activity, spy stations and all sorts of data, including updates on experimental Internet transmissions.

What's on

and you should be able to bluff your way through.

CICA PROJECTS

http://www.cica.indiana.edu/projects/index.html

These are details, images and results (in some cases) of projects undertaken at the Centre for Innovative Computer Applications. It's not limited to any particular scientific strain and there are experiments in linguistics, feminism, biology, geometry, fluid flow, geology, 3D, basketball, kinesiology and more. If you have an enquiring scientific mind, you'll surely find something fascinating here.

JET PROPULSION LAB

http://www.jpl.nasa.gov /

If you are a budding astronaut with an interest in space travel you can get access to NASA press releases, flight information and pictures from this NASA maintained Web server. News stories may be obtained as they break by finger to nasanews@space.mit.edu

JOINT INSTITUTE OF NUCLEAR REASEARCH

http://www.jinr.dubna.su/

Interested in nuclear research proposals and progress? If so, maybe you can make sense out of this joint venture by Communist and former Communist states.

KNOWN NUCLEAR EXPLOSIONS

Gopher:wealaka.okgeosurvey1.gov /

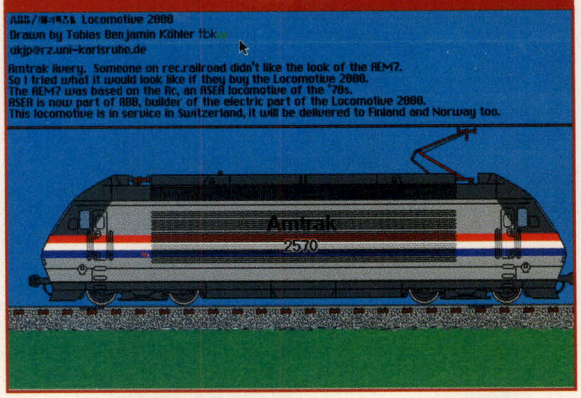
Technical details, coordinates, results and other information comprehensively recording the use and testing of nuclear devices. There's also access to earthquake catalogues and other seismological data.

MARINE GEOLOGY AND GEOPHYSICS

http://www.ngdc.noaa.gov /mgg/aboutmgg/wdcamgg.html

This site houses the World Data Centre for Marine Geology and Geophysics and is maintained by several US departments with very long names. It's primarily responsible for all types of data from the seafloor, including both in-situ measurements such as seafloor cores, and remotely sensed data such as marine magnetics, gravity, seismic reflection/refraction and bathymetry. This includes fully searchable inventories, slide sets, posters, relief data and CD-Roms for download or ordering. MGG personnel are available to answer questions by email.

NEW


Locomotive 2000
Drawn by Tobias Benjamin Köhler
ukjp@rz.uni-karlsruhe.de
Amtrak livery. Someone on rec.railroad didn't like the look of the AEM7.
So I tried what it would look like if they buy the Locomotive 2000.
The AEM7 was based on the Rc, an ASEA locomotive of the '70s.
ASEA is now part of ABB, builder of the electric part of the Locomotive 2000.
This locomotive is in service in Switzerland, it will be delivered to Finland and Norway too.
Amtrak
2570

The trainspotters' site

EUROPEAN RAILWAYS INFORMATION

http://mercurio.iet.unipi.it/home.html

This site has the usual timetables, news, locomotive pictures and related links, but what makes it really special are the groovy liveries created by ardent train chasers. Some of these are faithful reproductions depicting national colour schemes, which is spot on for identifying European trains as they zip under your bridge-perched umbrella chair, while others are fantasy sketches conjuring up futuristic engines you'd almost swap your carrier bag collection for. It may be arcane but it's nonetheless worth taking the trip at least once.

NATIONAL SCIENCE FOUNDATION

Gopher: nic.merit.edu:70 /1/.nsf-info

Historical statistics of traffic traversing the NSF Net, which are easily loadable into spreadsheet format.

ROBOTIC TELE-EXCAVATION

http://www.usc.edu/dept/raiders

Before you can climb into the cockpit of this interactive excavation robot, you'll need to pass a short quiz and, occasionally queue. Once aboard, you have full control and can zoom around a site littered with unknown objects. By aligning the camera and air blasting the terrain, you get to uncover things...

ROYAL OBSERVATORY, EDINBURGH

http://www.roe.ac.uk/

The main attraction for the layperson here is the superb collection of photographs from telescopes around the world. Detailed pictures of constellations and nebulae, usually the preserve of academics, are made publicly available. Some save you time by providing thumb nail previews before loading the full high resolution image. The home page claims it gets over 5,000 visits each week from over 30 countries. This superbly designed site should please professional and amateur astronomers alike.

SIAMESE FIGHTING FISH PROJECT

http://www.cica.indiana.edu/projects/Biology/index.html

In this project, animated videos of Siamese fighting fish were shown on a monitor next to a fish tank to test the behaviour of the real fish. You can download the images and animated movies, but at this stage results are not available.

SOUTH POLE

http://www.deakin.edu.au/edu/MSEE/GENII/NSPT/NSPThomePage.html

This includes the newsletter of the Amundsen-Scott South Pole Station in the Antarctic.

SPACE CALENDAR

http://newproducts.jpl.nasa.gov/calendar/calendar.html

A guide to upcoming anniversaries, rocket launches, meteor showers, eclipses, asteroid and planet viewings, occultations and other space happenings in the intergalactic calendar. Many of the entries have links to pictures, pages and further information.

SPACE SYSTEMS LABORATORY

http://ssl.umd.edu

A brief overview of studies into the applications of telerobotics in space, carried out at the University of Maryland. Better still, use the link to NASA to get a more coherent and comprehensive presentation of the scope of these projects.

STARS AND GALAXIES

http://www.eia.brad.ac.uk/btl/

This comprehensive multimedia guide has been taken from the CD-Rom Earth and Universe and provides audio, images and movies with an aim to demonstrating how stars behave, how their energy is generated and a clue about their origin and life cycle.

THE GEOMETRY CENTRE

http://www.geom.umn.edu/welcome.html

Located at the University of Minnesota, the Geometry Centre aims to develop, support and promote computational tools for visualising geometric structures in order to stimulate communication between mathematicians and the general public. There are forums, geometric software, pictures, workshops and other resources for advanced and novice mathematicians. This is also the focus site for experiments with WebOOGL, the format for distributing and linking 3D and higher objects across the Web.

Shopping

BURLINGTON COAT FACTORY

http://www.coat.com

An experimental service run by a US 'outerwear' retailer. "This is a work in progress and is subject to changes in focus,"

warns the home page rather elliptically. The service offers store location information, access to a rather interesting illustrated catalogue of the merchandise and invites feedback from users.

DOWNTOWN ANYWHERE

http://www.awa.com

A place where you can 'browse, learn, share and trade' or, more esoterically, Downtown Anywhere is described as a 'virtual salon for the marketplace of ideas'. This location's best selling points are its excellent shopping opportunities. This means you can buy a range of books and equipment, or how about a WWW T-shirt, just $13.95 from the Downtown Anywhere Souvenir Shop? If you decide to buy, you can pay by credit card or open a DA account so you can't overspend your limit. It takes time to find your way around any new place but exploring the streets of DA is both fun and worthwhile.

EURODOLLAR

http://www.eurodollar.co.uk

At the present time, the only Web service available here is a rental office branch list and a EuroDollar charge card form, but the company has big plans for developing its Net connections and promises to become a model example of a good commercial application.

GIFTS FOR DOG LOVERS

http://www.onramp.net/imagemaker

Forget the Doc Martin Megastore, this is shopping 1995! From the cute to the obsessively bizarre, email-order dog-embossed paraphernalia, including boxer shorts and lampshades. We kid you not – no breed is too obscure.

GLASS WINGS

http://www.aus.xanadu.com/GlassWings/welcome.html

A trial virtual shopping mall – it's sparse but shows promise of better things to come. Polyester Records offers a large indie selection by email and you can order popcorn in exotic flavours like Black Cherry and Honey Onion Mustard from Myers Popcorn. However, the site is primarily a showcase for Lee Perkins' games reviews.

NEW

See sacred scriptures

THE BHAGVAD GITA

http://www.cc.gatech.edu/gvu/people/Phd/Rakesh.Mullick/gita/gita.html

You can view PostScript Sanskrit pages of the Bhagvad Gita, the most sacred of Vedic literature at this singly focused site. However if your Sanskrit is not up to scratch you may find the English summary and translation easier going.

INTERNET SHOPPING NETWORK

http://www.internet.com

This is an excellent directory of computer-related products from over 600 suppliers. You can search by various parameters to size up the competition and vendors even agree to match any outside offer, which seems remarkably good of them. This all adds up to a textbook model for the future of direct marketing. To join, you must fax your credit card and delivery details in return for a membership number. At present, ISN won't deliver outside the US but it was recently taken over by the TV Home Shopping Channel, so watch out for synergies developing soon.

NETSURFER MARKETPLACE

http://www.netsurf.com/nsm/latest.mktplace.html

A new commercial online shopping mall with a wide variety of products on show. Results from its ongoing reader demographic survey are supplied, as well as advertising rates and style guides. There's not a lot here yet, but it's high quality, straightforward and diverse.

ONLINE YACHT BROKERAGE

http://beta.aladdin.co.uk/cpy/

You can scan through the list of yachts on offer, find something in your price range and then access a staggeringly detailed description complete with pictures of the craft. When you've narrowed it down to two or three you can email or phone to arrange a viewing. Theoretically, they can arrange delivery anywhere in the world.

UK INTERNET FLORIST

http://mkn.co.uk

Florists are becoming quite popular on the Web. This one's the first in the UK. You enter your credit card number, apology and delivery details into the provided form, whoosh them along the Internet and you're back in the good books before you get home.

USED SOFTWARE EXCHANGE

http://www.hyperion.com/usx/index.html

This international used software fleamarket is presently a free service. The database has several thoughtful filters enabling you to specify the software type, price, currency or platform. When you find something you want you can contact the vendor by email to arrange the trade.

Sport

ABDOMINAL TRAINING

http://www.uq.oz.au/ab.html

Get 'abs like ravioli' – an excellent analysis of stomach shaping from Australia's Queensland University.

ALADDIN SAILING INDEX

http://www.aladdin.co.uk:80/sihe/

There are links here to a number of sailing pages, such as the Royal Yachting Association, Royal Ocean Racing Club, Royal Southampton Yacht Club, US Coast Guard, plus racing news. There are also plenty of individual home pages, product launches and Challenge promotions such as the Americas Cup.

AUSTRALIAN CRICKET

http://www.physics.su.oz.au/~mar/cricket.html

If you despair at the domination of American sports on the Internet, here is a wealth of pointers to cricket gophers and information pages.

GOLF DATA ONLINE

http://www.gdol.com/

This service, at US$9.95 per month, supplies a database of golf information on over 14,000 golf courses in North America, including golf course maps and golf photos. There's pro golf schedules, golf tips, golf publications, golf merchandise, golf real estate, golf travel, golf weather, golf, golf, golf.

PURE WEB SOCCER

http://www.atm.ch.cam.ac.uk/sports/webs.html

This is a collection of links to football pages. You'll be able to make your way to most of the English and many of the European, US, Brazilian and Japanese clubs. There are also connections to tables, fixtures, results and all sorts of football chatter. In fact, even if you're not a fan, this subculture is worth checking out.

What's on

SPORT VIRTUAL LIBRARY

http://www.atm.ch.cam.ac.uk/sports/sports.html

This is probably the most extensive set of links to sports information on the Internet. If you can play it, it's on here. Sports covered include American football, baseball, rugby (union and league), soccer, cricket, tennis, cycling, rowing, orienteering, windsurfing, skiing, rock climbing, scuba diving, car rallying and white water rafting.

WEIGHTLIFTING PAGE

http://www.cs.odu.edu/~ksw/weights.html

Links to fitness newsgroups, weightlifting FAQs, competitive lifting rules, workout advice and pictures of men displaying their not unimpressive physiques.

Support

CHILD ADOPTION

http://www.gems.com:80/adoption/

This service provides a database with photgraphs and descriptions of children from all over the world seeking adoption. You will have to make your own mind up whether or not this is exploitation but it is certainly disturbing.

MISSING KIDS DATABASE

http://www.gems.com/kids/ncmec.html

This site is an indispensable resource in the search for missing children but the interface seriously limits its usefulness. To find if a child is reported as missing you must first search by region and then scan through the names. To retrieve a picture of this child, you need to click on each name separately. This is fine if you have the real name, not an alias, but if you only have a face it's a laborious process. The list encouragingly includes children who have been found.

POW/MIA DATABASE

http://lcweb2.loc.gov/pow/powhome.htm

This database will assist research into the US Government documents pertaining to US Military personnel killed, missing or imprisoned in South East Asia around the time of the Vietnam conflict. There is also a similar database of the attempts to locate Americans thought to be held in the former Soviet Union.

SAMARITANS

Email: jo@samaritans.org

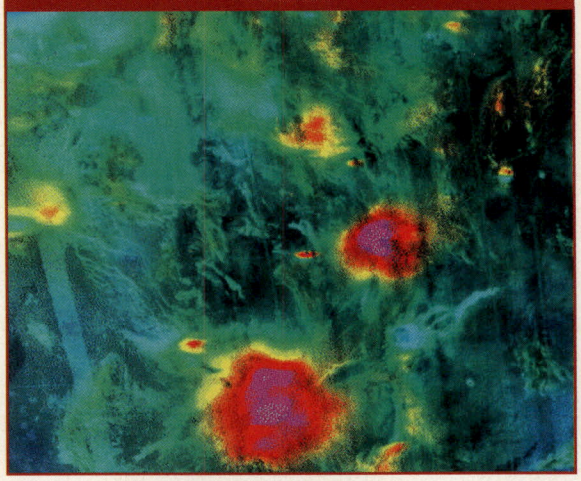
Use the Internet to email the Samaritans in the UK (also on samaritans@cix.compulink.co.uk or tel 0242 515777). The service follows a successful email test service run in the summer of 1994. For complete discretion, try the anonymous email server at samaritans@anon.penet.fi, although you may have to wait for a reply.

SILENT WITNESS

http://gn1.getnet.com:80/silent/

This service from Phoenix, Arizona's police department gives details, often with graphic photographs, of local crimes. If you have any information you can ring a toll free number to help solve the case and claim your reward. Even if you're not a local, you'll find this interesting as another innovative use of the Internet and as an indication of the level of crime in Arizona.

NEW



THE MAGELLAN MISSION TO VENUS

http://newproducts.jpl.nasa.gov/magellan/

News releases and historical footage taken from the first planetary spacecraft launched from a space shuttle. There are enough images, animations and technical documents on Venus and the project itself to satisfy even the most ardent astrophile. However, don't bother if you're looking for evidence of extraterrestrial life forms. Apparently those photos are kept in a secret vault called the X files. The mission recently concluded with the craft resting in pieces on the surface of Venus.

STOLEN CAR REPORT

http://kbt.kbt.com/locator/

Hopefully a useful service for locating and identifying stolen cars will spring from this site. There's not much on show yet, and there are no database browsing facilities, but these are early days yet.

Telecomms

AT&T

http://youwill.com

This is where you find information about the products AT&T has on offer now and in mind for the future. It also provides a communications link for support.

AT&T'S 800 INFORMATION

http://harvest.cs.colorado.edu/brokers/800/query.html

This broker is part of the excellent Harvest WWW search index and the information was gathered from AT&T's 800 Web pages. This customised broker allows you to browse and search by category, business name and telephone number, and there's even support for misspellings.

FREE FAX SERVICE

http://linux1.balliol.ox.ac.uk/fax/faxsend.html

As with many Internet addresses, this fledgling service is growing rapidly and seems to have huge potential. Balliol College, Oxford, is the UK home page for what's billed as a free Internet fax server. After you've completed the online fax form, the recipient's name and address is converted to an email address and then routed to the nearest destination computer. This, in turn, restores the message back into fax format and transmits it via the local phone network to the addressee's fax. There are a few of these sites around the Web, but at this stage they will only work if the destination has a local participator. Try it and see.

NTT

http://www.ntt.jp/

Japanese links and information make this an excellent resource from the Nippon Telegraph and Telephone Corporation in Tokyo. Apart from chapters of material on the services and research efforts of NTT, there's weather, national music, customs, clickable maps, tourist material, audio language lessons, Japanese site links, legal matters, sports, virtual libraries, news and much more. You can read in English or Japanese.

Time

CUCKOO'S CLOCK

http://www.galcit.caltech.edu/~ta/cgi-bin/cclock-ta

This one gives you the current time in California along with a suitable sound accompaniment.

GREENWICH MEAN TIME

http://www.yale.edu/cgi-bin/gmt-saytime.au

This is a great service, just enter this address and, depending on your configuration, within less than a minute you will hear the time played back to you through your speaker. Bit of a shame, it's never correct.

TIME ZONE CONVERTER

http://www.cilea.it/MBone/timezones.html

You can link to either of two

time zone converters from this page. One is simple, you just click on the region to find the time there. The other allows you to convert from one time zone to another at any time and date, not just the current ones.

Transport

RAILSERVER

http://rzstud1.rz.uni-karlsruhe.de/~ule3/info-trn.html

Having access to all this European railroad information, with schedules, pictures, prices and discounts, plus hints and links to sites all over Europe, must make you feel smug.

THE VIRTUAL RAILROAD

http://gpu.srv.ualberta.ca/~ybeaudoi/Virtual_Railroad/home.htm#menu

An exhilarating introduction for would-be ferrophiliacs to the glamorous pastime of train spotting. The Internet Steam Roster has terrific snaps of Puffing Billys from as far away as China. Whatever isn't here is surely pointed to or, perhaps, best avoided.

Travel Information

CIA WORLD FACTBOOK

http://www.ic.gov/94fact/fb94toc/fb94toc.html

An encyclopaedic summary of every county's essential statistics and details. Disputed zones such as the Gaza Strip and the West Bank are treated as separate countries with their own data. It's not updated frequently enough, though, as neither of these regions' recently won independence is mentioned. The information provided includes geographical boundaries, international disputes, climate, geography, economic indicators, population demographics, government, communications and defence. This is excellent source material for school, travel or business trivia, but it won't give you enough intelligence to plot a military takeover.

CITY.NET

http://www.city.net/

Here we have a rather excellent guide for browsing community and tourist information from all around the globe.

EDINBURGH

http://www.efr.hw.ac.uk/EDC/Edinburgh.html

Economic facts, figures, city and suburban maps, tour guides, history, famous inhabitants and photos of Edinburgh, the second most popular tourist destination in the UK.

FRIENDS AND PARTNERS

http://solar.rtd.utk.edu/friends/home.html

This Russian-based information service is a joint venture with the US and aims to help create a better understanding between the two nations. There is plenty of information on topics such as economics, education, geography, music, weather and health, plus a literature section which contains the full text of The Brothers Karamazov and Anna Karenina. There are also resources encouraging business alliances but the travel information is a bit light.

GNN TRAVEL RESOURCE CENTRE

http://gnn.com/cgi-bin/imagemap/HOME?457,190

There are a few commercial sites featured here, including the conservative travel publishing giant Fodor's and Mountain Travel. Apart from that there are collections of traveller's tales, albums, book reviews and virtual travel guides from almost every country.

INTERACTIVE MAP OF THE UK AND IRELAND

http://www.cs.ucl.ac.uk/misc/uk/intro.html

You'll probably find copies of this on quite a few sites around the UK, particularly the universities. There's no real limitation to the amount of regional data which can or could be retrieved by this sensible, friendly, point and click interface. There's news, weather, statistics, entertainment, broadcast listings, transport routes and travel times, interactive rail and city maps, guided tours, Web servers and more. It can only grow from here, maybe with your help.

IRANIAN CULTURAL INFORMATION

http://tehran.stanford.edu/www/tehran.html

Iranian/Persian interests such as a routine which generates Persian script from ASCII, recipes, Persian calendars, virtual maps, literature, art, Islam and cultural events.

LONELY PLANET GUIDEBOOKS

http://www.iol.ie/gnn/bus/lp/index.html

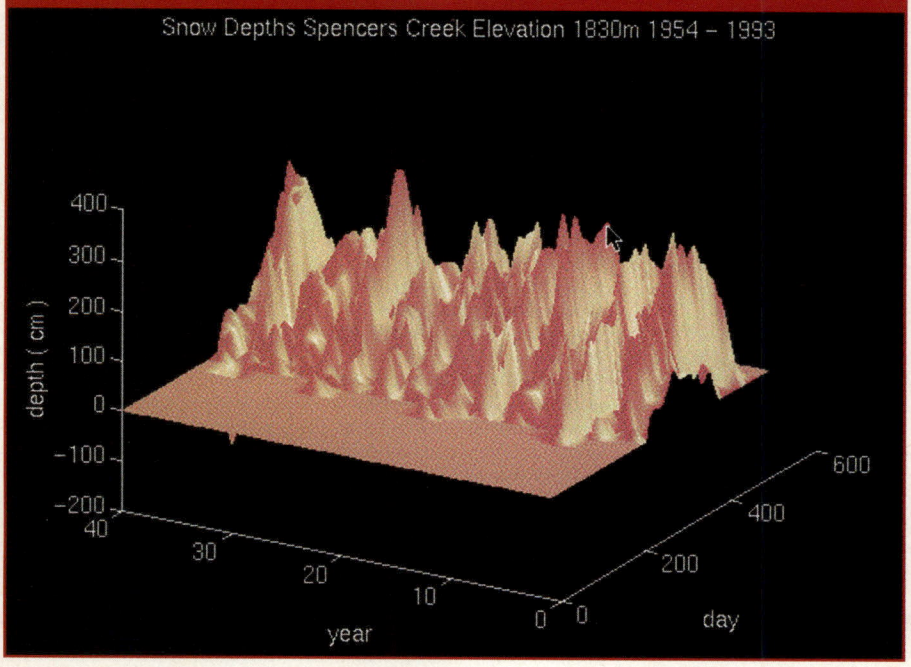
Despite being the world's largest travel publisher, the information at the Lonely Planet site is far too brief. There's a titles list and an outdated nugatory collection of travellers' tales but, in short, it's a major disappointment.

MAP BROWSER

http://pubweb.parc.xerox.com:80/

Xerox PARC (Palo Alto Research Center) brought the world GUIs (Graphical User Interfaces) and Ethernet. Its public Web site

NEW



SKI WEB

http://www.sierra.net/SkiWeb

This is a regionally arranged international guide for skiers. Once you've chosen your destination, what's on offer will differ but will usually include satellite photos, snow reports, accommodation and coming events. This includes many North American, Australian and New Zealand runs. Europe, at this stage, is only represented by Slovenia and Slovakia, but developments are promised.

What's on

provides, among other things, a graphical world-wide map browser. You can obtain maps showing rivers, borders, and other information, by specifying a location on the globe.

MCW INTERNATIONAL TRAVELERS CLINIC

http://www.intmed.mcw.edu/ITC/Health.html

There is token information here on the most prevalent diseases travellers are likely to encounter, symptoms and possible cures. However, with a little more effort this could be a great deal more useful. It gives little in the way of zonal advice, drug contra-indications or outbreak alerts and there's not even mention of dysentery.

MIT ARAB STUDENT ORGANISATION

http://www.mit.edu:8001/activities/arab/homepage.html

If you've been looking for pointers to Arabic pages this is your lucky day. Apart from details and news of this student organisation, there are links to Arabic software suppliers, student groups, cultural organisations, reference works, photo libraries, Middle Eastern servers and other Arab-related pages, sorted by country of origin.

PARIS

http://meteora.ucsd.edu:80/~norman/paris/

Thinking of a trip to Paris? This one provides a virtual tour in English of popular museums, cafés, monuments, shops, rail systems, educational institutions and many other attractions. Or if you really want to punish yourself there's also a version in French. You can do it via inter-active maps or just text.

PCTRAVEL

Telnet:pctravel.com

The first publicly available free airline reservation and ticketing service – you can access the Apollo Reservation System to book from a choice of over 500 airlines and, once booked, your ticket can be Fedexed to you from the US. Feedback please.

SEE THE WORLD

http://international.com/III/nct.html

This scheme allows you to act as a travel agent, receiving discounted fares and tax perks. You can earn commission if you introduce friends and then they too can enjoy identical benefits. Sounds familiar? What's the catch? Oh, it does have a small registration fee.

WHAT'S HOT

CHOICE

An area of great natural beauty

GRAND CANYON NATIONAL PARK

http://www.kbt.com/gc/gc_home

This private guide to the Grand Canyon is a work of great dedication and beauty. There are no half measures taken in providing trail and locator maps, track descriptions, images, service details, book lists, history and advice on other local attractions.

THE JERUSALEM MOSAIC

http://shum.cc.huji.ac.il/jeru/jerusalem.html

This pretty but slow site offers a virtual tour through the old city of Jerusalem, including faces, maps, views, paintings and a view from the sky. There's historical information, travel details and links to other Hebrew university information servers via a sensitive map of Israel.

THE VIRTUAL TOURIST

http://wings.buffalo.edu/world/

Click on the atlas interface to zoom into the region of your choice. Once you're down to country level, you can choose between a resource map, resource list or general country information. This could ultimately link you with any server within the region.

US TRAVEL WARNINGS

http://www.stolaf.edu/network/travel-advisories.html

This provides essential information if you're planning to visit a potential hot spot, but it's not a definitive guide to safety. Potential war zones tend to bubble for years before they attract foriegn media and consular attention, usually after an insurgent group takes responsibility for killing tourists, but after it's died down they may not bother to retract this warning. In other words, don't ignore these bulletins, but seek other advice before postponing your adventure.

WORLD'S LARGEST SUBWAY MAP

http://metro.jussieu.fr:10001/

Pick from a selection of major cities, choose a starting and finishing destination and the algorithm will estimate the travelling time. A fun idea but a joke in practice, due to assumptions such as immediate connections and homogenous flow. "What about signal failure?" I hear you ask.

Regrettably, this is one of those sites that's often ignorantly used as an example of the vital information jet-setters can currently glean from the world of the Internet.

Universities

BRADFORD UNIVERSITY

http://www.brad.ac.uk

A nicely produced Web service which includes pictures of and information on Bradford, plus personal home pages, which are always a good source of links to unexpected places.

CAMBRIDGE UNIVERSITY

http://www.cam.ac.uk

Cambridge has the UK's highest Internet usage, both in and around the university and this is the home page for the main university server. Through a Gopher menu, there's probably the UK's most comprehensive collection of local information, from railway timetables and bus services to lists of chemists,

dentists, music venues, and much, much more. Alas, no personal home pages yet.

MIT

http://www.mit.edu

A great university Web server, this includes a large number of student and staff home pages with links to the complete gamut of Internet activity. One quick way to see into the outer reaches of the Internet world is through the MIT students' home pages on the Student Information BoardWorld (SIB).

SIGWEB UK & I

http://www.qub.ac.uk/sigweb/index.html

This service has been set up to foster relationships between researchers and developers in British and Irish colleges. Its active maps are excellent for locating UK and Irish servers.

Weather

INTERACTIVE WEATHER BROWSER

http://rs560.cl.msu.edu/weather/interactive.html

Interactive temperature map of the USA giving detailed hourly updated weather reports.

NATIONAL SEVERE STORMS LAB

http://www.nssl.uoknor.edu/

If tornadoes, blizzards, flash floods, thunderstorms, hurricanes, cyclones, lightning and severe storms are just your bag, then step in here. These guys are not put off by a bit of drizzle spoiling their cricket, they're out whipping up lightning rods on mountain peaks trying to attract the big stuff. If you're a thunder buff, you should read the advice on responsible storm chasing – it may just temper that Pavlovian frenzy for the car keys when the next distant rumble snaps you from your post-prandial stupor.

THE DAILY PLANET

http://www.atmos.uiuc.edu/

This server at the University of Illinois' Department of Atmospheric Sciences, has meteorological maps, satellite images, pointers to sources of climactic data and 'instructional modules'. Although aimed at the serious sky watcher, this is also a good place to pick up titbits to toss into general weather chat. This site also has one of the best designed contents page graphics on the Net.

WEATHER

http://www.cs.ucl.ac.uk/misc/weather/weather.html

Digitised satellite pictures to warn you of the impending downpour. Take an umbrella.

WEATHER INFORMATION

http://web.nexor.co.uk/users/jpo/weather/weather.html

This is the place for regularly updated weather, infra-red and visible light satellite images from all over the world, particularly Europe and the UK. There are other links, too.

Weird!

BODY PIERCING

http://indyunix.iupui.edu/~dlbewley/body-p/body-p.html

FAQs, links, diagrams, pictures, e-zines and warnings on the body piercing craze.

CODPIECE INTERNATIONAL

http://www.teleport.com/~codpiece/

This is a campaign to revive the codpiece, presenting the case in a cute style that may amuse. However, there are no codpieces for sale here, so what's the point? To sell sloganed T-shirts and bumper stickers, of course.

DAN'S GALLERY OF THE GROTESQUE

http://coos.dartmouth.edu/~djb/GotG/GotG_top.html

Dan's a med student who goes out of his way to display the most bizarre, tasteless and repulsive photographic gallery on the Net. He manages this with exhibits like Foyer of Forensics, Neonatal Nightmares and Children Shouldn't Play with Dead Things. Eat first.

EXPLODING HEADS

http://www.mit.edu:8001/people/mkgray/head-explode.html

Worried that your head may explode? These tips will help you identify early symptoms.

HYPERCORDIA

http://vaxa.stevens-tech.edu:8000/jofo/hyperdiscordia.htm

This is possibly the most mentally unhinged site in cyberspace – and that is saying something. In fact it's so strange that it defies reviewing, except perhaps with a single word.

RANJIT'S LUNCH

http://oz.sas.upenn.edu/miscellany/lunch.html

A fascinating itemisation of Ranjit Bhatnager's diet with links to Sho Kuwamoto's, Ben Cox's and other crucial lunch servers. Could become legendary...

RECTAL FOREIGN BODIES

http://www.well.com/www/cynsa/newbutt.html

Highlights from Surgery Magazine, complete with X-rays, confirming the danger of having too much fun in the privacy of your own home.

STEPS IN OVERCOMING URGES

http://vector.casti.com/QRD/religion/mormon-masturbation

Having trouble leaving it alone? You'll find timely advice here.

STRAWBERRY POPTART TOASTER...

http://cbi.tamucc.edu/~pmichaud/toast/

This ground-breaking experiment turns an innocent kitchen appliance into a deadly incendiary device but correct laboratory procedures are strictly adhered to. If you must try this at home, be sure to call the fire brigade in advance!

VOMITUS MAXIMUS MUSEUM

http://www.vomitus.com/vomitus/

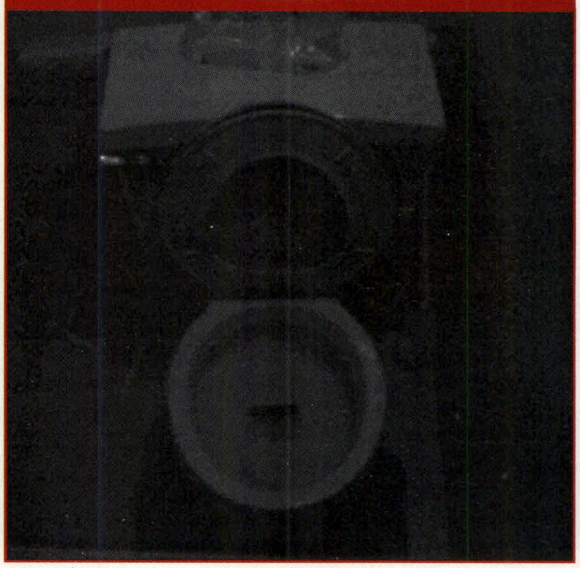
These surreal macabre images and twisted story captions created by R S Connett are as perverse, grotesque and disturbing as anything you can find on the Web.

WALL O' SHAME

http://web.kaleida.com:80/u/danfuzz/info/words/wall_o_shame/

This is a hilarious collection of incredible but apparently true stories, where the writer or subject deserves vilification. Most speak for themselves, but make sure you check out the name change press release from the artist formerly known as Prince.

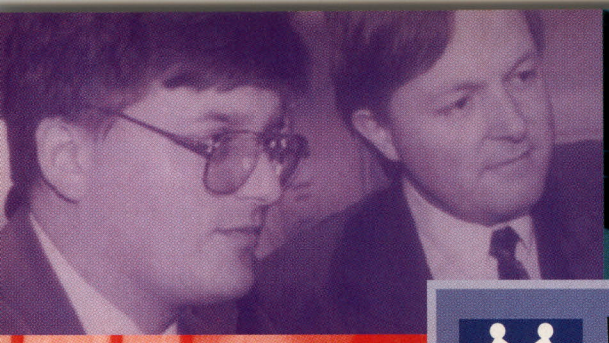
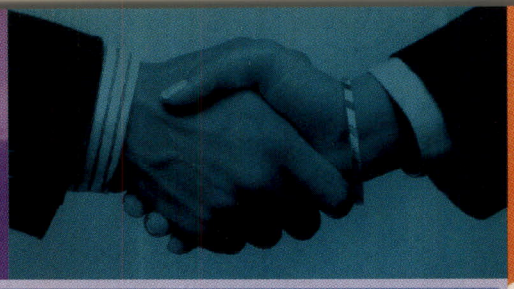
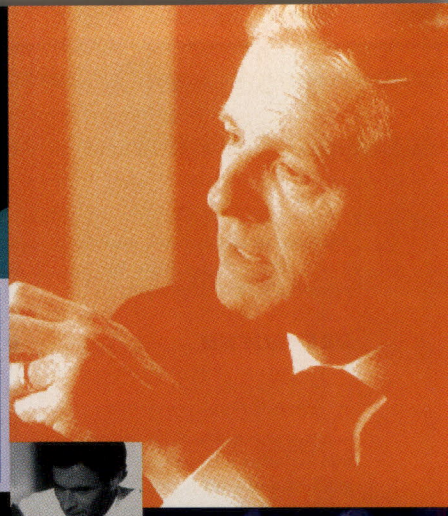
NEW



ONLINE TOILET

http://wps.com/toilet/index.html

Coprophiliacs, potty heads and porcelain spotters will revel in this virtual toilet and during breaks you can link up to the WPS home page for more anarchy. Don't get caught with this one in your bookmarks.

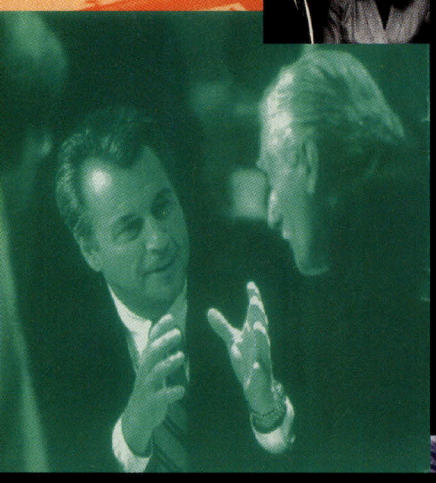
Workgroup COMPUTING

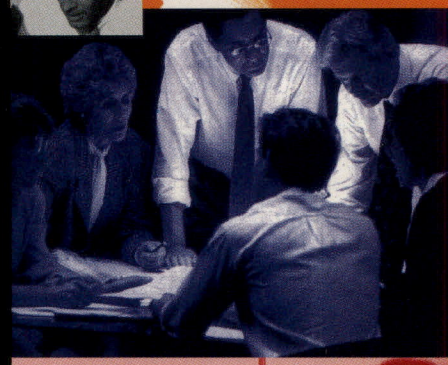
You may have heard how workgroup computing can transform the way your business operates by improving productivity, communication, information access and by getting people working better - together.

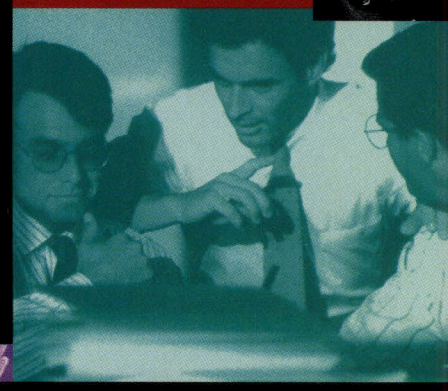
Now, you can discover how your organisation can benefit at Workgroup Computing '95. From the 22nd to the 24th March at the Ramada Hotel, IT managers and business strategists can evaluate the latest productivity enhancing solutions from simple e-mail and scheduling packages to document management and workflow solutions for the enterprise. And non-technical business managers can use the opportunity to find out more about the subject and establish how it can improve the efficiency of their businesses.

Workgroup Computing '95 combines an exhibition, conference and free seminar sessions providing the perfect opportunity to explore innovative solutions from the major names in the industry including IBM, Microsoft, Novell, Wang and XSoft. Case studies of organisations in your industry sector will help you learn from experiences of those who have already made an investment. The 'Management Forum' will give business managers a starting point from which to explore the broader business implications and benefits of Workgroup Computing, without discussing specific products.

Entrance to the exhibition is free with a ticket - just call 0181 984 7711. For further information on conference programmes and booking details call Tracy Collins on 0171 388 2430 or complete the coupon below.







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Workgroup Computing '95
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Hampstead Road,
London, NW1 7QX
Tel: 0171 388 2430
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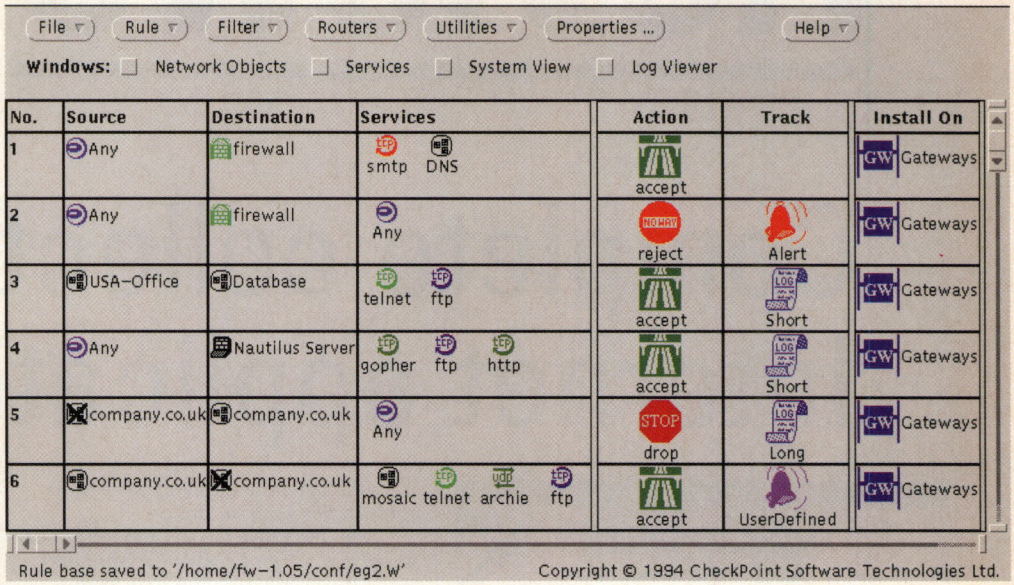
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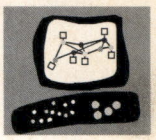

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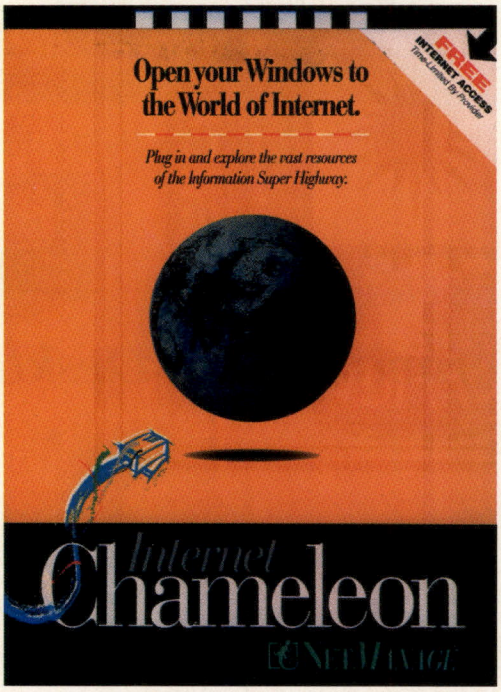
Reviews

Complete collection of Internet application tools


Open your Windows to the World of Internet.
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FREE
INTERNET ACCESS
Internet Chameleon

When it comes to Windows-based software suites designed to provide Internet access, Chameleon from NetManage is a highly complex package. That doesn't mean Chameleon is particularly difficult to use – it isn't. It's just that it has almost 30 mini-programs and is a tool for the serious Net surfer.

There are three major new additions in version 4.1: a new Web browser; a user-friendly Archie program; and an instant link to the Net for new subscribers.

Starting with the instant access facility, sadly the UK is once again lagging behind North America and at present there appears to be no UK service provider capable of exploiting Chameleon's Instant Internet facility. This is a shame since all the newcomer needs to do is click on the Instant Internet button and then the program asks for the user's address and credit card details. Once these have been completed, the package dials onto the Net and automatically signs the owner up with an associated provider.

In North America, Net provider PSI already takes advantage of this capability with its InterRamp offering. Over here, however, service provider Eunet is still investigating whether it might offer such an option.

Still, **INTERNET** was able to try out version 4.1 over Eunet's network and was impressed with the new Web browser, WebSurfer. This is designed for viewing WWW pages. Instead of being overburdened with too many buttons to click on, WebSurfer has just eight which, for example, enable the user to add pages to a hotlist of favourite places.

Some features of WebSurfer work well, for example the software swiftly displays a complete Web page and uses a special icon to indicate the places where graphic images will appear while they are still being downloaded. This speeds up the process of surfing since you can quickly select your next Web link – a browser such as Mosaic would keep you waiting for the complete page.

While with Netscape Navigator it is easy to save Web pages and view them offline, WebSurfer makes this process far more complicated. However, experienced users may like the fact that WebSurfer saves the graphical content of a Web page separately and in a Gif format, but one gripe with WebSurfer is that it doesn't use the bottom line of the screen to indicate which item is currently being downloaded. Hence the user can't tell whether a large or small file is still coming down the line.

The next new software module within Chameleon 4.1 is Archie. This is the standard tool which searches the Internet looking for items connected with a subject specified by the user. With Chameleon, however, the little boy's head that represents Archie is an animated icon so Archie actually frowns while he finds the information!

From a technical angle, a number of improvements have been made to Chameleon. For example, the package is able to support PC-to-modem connection speeds of up to 115,200 bps (it was previously restricted to 38,400 bps). This means, for instance, that the user can take full advantage of the data compression facilities built into the latest generation of modems.

Those with V.34/V.Fast modems which have a basic line speed of 28,800 bps will see the difference when downloading files. More important, however, is that this increased file transfer speed means the graphics files in WWW pages will arrive on your PC much faster. **INTERNET** tried this by dialling Eunet's Glasgow POP and saw a real difference.

A more significant advance with Chameleon 4.1 is that it supports ISDN cards directly. Consequently, manufacturers who bother to write the necessary drivers for their ISDN adapters will be able to work with Chameleon. Given the problems **INTERNET** had with KNX's ISDN card, this new WinISDN interface can provide the ideal solution. ISDN support may seem a small point but speed is vital for concentrated surfing and an ISDN link is the obvious choice for that high speed connection.

As seems common in the Net world, Chameleon isn't without bugs. For example, running the serial port at the highest possible speed caused crashes, but dropping the port speed down one notch to 56,000 bps resulted in far more reliable connections.

There's no escaping the fact that Chameleon has been designed with a relatively sophisticated Net user, not a newcomer, in mind. However, this is really a bonus because as Chameleon covers most bases with a plethora of modules, its owner won't be forced to scour the Net for additional software when the time comes to do something a little more complex than browse through WWW pages.

There isn't actually a price for Chameleon version, 4.1 since Net service providers such as Eunet build the cost into their charges for supplying customers with Net access. Nonetheless, those who would like to sample Chameleon's delights can obtain a full demo copy by emailing Donna@netmanage.com

Tony Dennis

Review in brief

INTERNET CHAMELEON 4.1 – PRICE NOT APPLICABLE

Pro: A sophisticated package with modules to cover just about anything you might want to do on the Net.

Con: Hard for novices to get to grips with and there are a few bugs.

Contact: NetManage
Tel: 01483 302333
Email: support@netmanage.com

Quality ISDN terminal adapter

I have used a Citam terminal adapter unit with my Internet service with Pipex for eight months. It has never missed a beat and provides ample configuring scope for numerous other applications. I am particularly impressed with how easy it is to configure and its security features.

The unit is scarcely larger than a modem, measuring 25 x 13 x 5cm, and has a plug-in card construction so that the same innards can grace the standalone unit or serve as a component in a rack-mounted system. A four-figure LED for diagnostic status and menu display keeps company with two menu-driving buttons, three indicator lights and a re-set on the front panel. The back panel holds the interface for the host or router, power, ISDN lead connection and an optional terminal 'supervisor' port.

The Citam can be equipped with your choice of X.21, V.24 or V.35. One high-spec Citam model provides dual X.21. Quite sexy is the (untested by me) model that lets you duplex the two ISDN B channels for 128k nominal throughput. You do have to have a matching Citam on each end, though, as this is one area where standards lag behind users' need for speed.

The choice of interface is important. One, you have to match it to your software. In this regard, Citam gives you all the choices you are likely to require. The second consideration is performance and is related to the third, price. The wide range of options for the Citam gives you the flexibility to be the speed demon or the penny pincher.

You can configure the TA via the front two switches with the help of the LED display but the supervisor port makes the job much easier. With an ASCII terminal attached to the Citam you have your choice of either a command line interface or a menu system that makes configuration a very straightforward task, as long as you have a VT100 terminal to hand.

Pipex provides a full set-up script for the Citam to use in conjunction with its Telebit Netblazer router recommendation, so little pre-commissioning is required. You can, however, set parameters such as baud rate (64k for ISDN), async or sync modes, sub-addressing, dial numbers and various signal line settings.

The price of the Citam varies with the options selected but it's going down all the time. Although TAs cost appreciably more than V.Fast modems, the additional speed and virtually instantaneous connection make the payback quick. The Citam TA is a quality product that has provided faultless service over the last half year.
Paul Lavin

Review in brief

CITAM ISDN TERMINAL ADAPTER – £995

Pro: Definitely a quality product with excellent features – it's reliable and highly recommended.

Con: If you're strapped for cash, terminal adapters do come cheaper.

Contact: Controlware Communications Systems Tel: 01635 871636 Fax: 01635 871646

One-stop solution suitable for the inexperienced

The rapid growth of the Internet has had major repercussions. For example, swift expansion has created an enormous pent-up demand for dial-up software and users are searching for a package which really makes it easy to start surfing the Net with a modem.

The second major spin-off has been tremendous hardware/software problems for those attempting to get onto the Net. In their eagerness to get products to market, suppliers have been releasing their wares before they are fully tried and tested. Unipalm has managed to combine both these trends in version 2.1.1 of its Internet access software, Solo.

Pipex Solo is a suite of Windows-based software designed to meet the needs of the ordinary person who requires a Net connection. Unipalm (which runs its Internet access service under the Pipex banner) has a long tradition of providing UK customers with Net access, so the company is definitely an old hand. To date, however, the majority of Pipex users have been employees of large corporations, so Solo is Unipalm's attempt to cater for the mobile executive or home user.

The complete package is indeed impressive; it combines Unipalm's own Mail-it electronic mail program with Netscape Navigator, which is essentially a commercialised version of the popular Mosaic Web browser.

In addition to these two main elements, there is a utility called Ping, and for more experienced users who want to make a direct connection with a server on the Net, a version of Telnet.

Telnet is best left for those who really understand the Unix environment. Ping, however, is relatively simple and is used to test that there really is a link between your PC and a particular server on the Net.

Before expounding the virtues of Solo as a complete Net solution, mention should be made of the titanic struggle required by this magazine to persuade Solo to work.

INTERNET was originally supplied with a beta version of the package. This refused to allow our own PC to synchronise properly with the Pipex system. Ping showed that a connection was indeed possible but the PC was still unable to 'see' Pipex' domain name server.

This beta version was followed by a copy of 2.1.1 which initially caused Windows to crash. Eventually, with the modem (in this case a Hayes Ultra) configured to a set line speed, it was possible to take advantage of the Solo software. However, Unipalm claims a debugged version of Solo – renamed Dial – will be available shortly.

From a novice's viewpoint, the list of supported modems contains an extremely healthy sprinkling of UK models, such as those from Amstrad and Dataflex Design, and this should help users get up and running swiftly.

In order to run a Web browser such as Netscape Navigator, it is necessary to have a full TCP/IP connection. Such a link is achieved by dialling into one of the six Pipex POPs. However, unlike the rival Eunet service, which requires the user to dial into a specific POP, with Solo it is possible to roam the country and dial into the nearest one.

One nice touch within Solo is the ability to go straight into one of the four Net applications using Solo's Quick Launch facility.

With rival offerings, once a link has been established the user is left wondering what to do next. With Solo it is obvious – if you want to check your mail, then hit the Mail-it Quick Launch button or if you wish to cruise Web servers hit the Netscape button.

Probably Solo's best feature is its email capability. There are some very neat user-friendly touches within Mail-it. One of these is an animated icon which shows a letter icon moving towards a postbox icon after the user selects the Send option.

Another useful feature is the ability to attach files to a message, making Mail-it fully compatible with the Mime (Multipurpose Internet Mail Extensions) standard. In short, Mime allows you to ▶

Reviews

swap computer (binary) files without having to worry about encoding and decoding them.

Mail-it is also Mapi (Microsoft Application Programming Interface) compatible, which makes it easy to send Net messages from within lan-based email packages such as Microsoft Mail.

The biggest criticism of Solo is that there is no individual module for reading news groups. Unipalm claims this saves users from downloading thousands of messages but, on the other hand, it makes searching through stored messages much trickier. There is no standalone Gopher module either, but that function, of course, is already built into Netscape.

While rival publications have given away free versions of Solo, Pipex/Unipalm expects people to pay £230 plus VAT for it, a disparity which surely cannot last. Additionally, in order to connect to Pipex, the customer needs to pay a £50 set-up fee and £180 per annum access charges. Customers have to pay their own BT or Mercury call charges as well.

Solo has some very attractive features and once all the bugs have been ironed out it will form an easy package for the relatively inexperienced PC user.

Tony Dennis

Review in brief

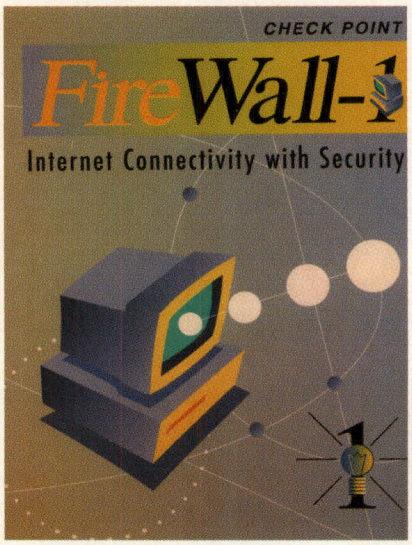
SOLO – £230 + VAT

Pro: Easy to use, nice features and particularly good for email.

Con: A few bugs at present and the whole package is quite expensive.

Contact: Pipex
Tel:01223 250120
Email: david@pipex.net
Web: http://worldserver.pipex.com

Serious network security device



The latest Microsoft dictionary-on-a-CD-ROM tells me that the noun 'firewall' is a fireproof wall used as a barrier to prevent the spread of fire. It's not stretching the point too far to call this useful security package from Check Point Software Firewall 1, as it is designed to keep unwanted users off your internal systems.

Firewall 1 keeps out the bad guys by a fairly simple, basic tactic: if it doesn't know your IP address when you connect, or allow the type of service you request, you don't even get the login prompt. IP filtering is the name for this methodology and it is secure against all but the most persistent hacker.

The copy of Firewall that I had for review had versions for Sun's Solaris 2.3 and the older SunOS 4.1. I ran Solaris on a Sparc station 20 which is an excellent candidate for firewalling as Sun's desktop multiprocessor platforms are frequently connected to the Internet as hosts. The SunOS version was tested on an ageing Sun IPX which is more likely to be a client than a server these days. Sun is currently the only platform supported by Firewall 1 because Sun's leadership on the Net makes others a distant second, but it may be ported to other Unix hosts in the future. No word, however, about NT.

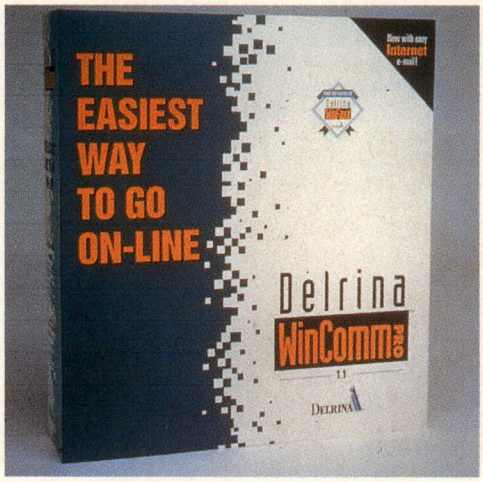
If you were brought up on a diet of PC software, you may gulp at the cost of Firewall 1's enterprise-wide security, but a 'lite' version protecting no more than 50 IP nodes is considerably less expensive.

The program gives you complete control over every type of access to your system, including Telnet, services based in UDS like DNS, and Archie, FTP, RPC services like NIS and NFS, and also Web access by browser software like Mosaic or Netscape Navigator.

There is one part of the Firewall 1 shield mechanism which system administrators will especially enjoy – it requires absolutely no changes to applications or users. It is also utterly transparent to an authorised user while absolutely opaque to interlopers. I couldn't tell it was there in terms of performance, compatibility or connectivity until I tried to log in from an unlisted IP node or unauthorised service.

Firewall 1 inspects every packet passing through key locations in your network at the data link and network layers and up. It can be set to watch

Email-only package for PC users with modems



Best known for its PC fax software WinFax, Delrina has now launched Windows-based Internet software. This new application takes the form of an add-in module, Internet Messenger, which integrates into the general PC comms package WinComm Pro 1.1. It is intended purely for messaging via the Net and there are no Web browser or Gopher-style applications with this package.

Internet Messenger is aimed at those accessing the Internet via modem. Rather than use a full TCP/IP connection, it utilises a Unix 'shell' account on the host system of the Internet provider. When Messenger is first started, the software automatically uploads its own programs, which then run on the host computer. Thereafter, Messenger communicates with the host service via UUCP (Unix to Unix CoPy) protocols.

For Europe, Delrina has allied with no fewer than 15 service providers. When Messenger is first initialised the package runs a script that automatically registers the user with the service provider.

At present, this facility is not available from Delrina's UK partner, Eunet, so potential subscribers have to make a voice call to sign on, but the procedure is nonetheless easy.

As an email-only package, Messenger has some attractive facilities. For instance, there is a built-in spellchecker and support for Mime (Multipurpose Internet Mail Extensions) and automatic uuencoding/uudecoding of binary documents. This means users can swap a formatted file with another person over the Internet.

Messenger will have a strong appeal for those who want to send Net mail from portables, as the software has the ability to synchronise and duplicate the message base on the host system and the message base held on the portable.

Delrina has designed the software so that, from the menu system, the PC user can skip between fax (with WinFax); the Net (with Messenger); and

Internet gateway machines, routers, servers or critical workstations. If the sender of the packets or the service isn't on the green list, they get the red light every time.

The heart of the system is a rule base that can be created with any text editor. When compiled, it acts as a filter that says 'yea' or 'nay' to certain clients connecting to certain hosts, or two computers that are trying to communicate via a gateway. Firewall 1 can accept, reject or drop a packet according to the rules in the active filter and can be focused on inbound, outbound or both types of packets.

All Firewall 1's functions are controlled by a GUI that demystifies the functioning of the software, but there is a command line interface for diehards. Setting up your filter requires defining network objects and allowed services and then installing – mostly point-and-click. Monitoring the system status is clear and detailed and highly configurable log information is provided.

In a well balanced security plan based on rational risk assessment, Firewall 1 can play an important part. If you do your part as well, it will keep you utterly safe.

Paul Lavin

Review in brief

FIREWALL 1 – £14,500

Pro: This plus a sensible password policy will keep you system secure.

Con: However, if you're guarding the secret formula of Coca Cola or the shipping dates for young British calfs, take additional precautions.

Contact: Electric Mail Tel: 01223 420193
Email: infor@elmail.co.uk

ordinary modem communications (with WinComm). Sadly all three packages don't currently share an address book, which is something of a shame!

Delrina is also hoping that Messenger could be stretched to act as a news reader for Usenet news groups, but as a Net-friendly electronic mail package, however, Internet Messenger is well worth investigating.

Tony Dennis

Review in brief

INTERNET MESSENGER £99 (SOLD AS PART OF WINCOMM PRO)

Pro: A good, functional email package, particularly for portable users.

Con: It will be even easier to use when automatic service provider registration is incorporated.

Contact: Delrina
Tel: 0181 207 3163
email: sales@delrina.com

Net newcomers' training video

From its title, you would be forgiven for suspecting that this Purple Training video is just another plug for Cyberia, London's cybercafé, or its access provider and part-owner Easynet. Well not entirely, because while the video features several outsiders, including Demon staff proffering supportive gems of cyber hype, navigation through the Internet is conducted mostly on location at Cyberia through the friendly Easynet-configured interface. As it turns out, however, this is more of a plug for the Internet itself.

What it amounts to is a UK-focused, firmly-guided, whirlwind tour. The concept of the Internet is introduced, along with email, the WWW, Usenet, mailing lists, Telnet and FTP. In fact, covering so much ground in so little time is an ambitious project and the approach is simply to dive right in and demonstrate the Internet in action, navigated from the helm of fast PC running Mosaic via a direct connection. Each topic is soundly reinforced by interviews with prominent British Internet personalities

It all seems so simple and no one bothers boring you with the intricacies of setting up Winsock, Unix commands or configuring your terminal package, so the video is an ideal stepping stone for absolute newbies and those who fear they are technophobes.

Cyberian Connection does, however, succeed in capturing the excitement of being online, of reducing international distances with email and having access to so much information. Many of the most talked about issues are mentioned, such as netiquette, flaming, data encryption, getting on to mailing lists and how to choose a service provider.

If you have difficulty getting your mind around the concept of the Internet, this should help, but it could also inspire you to see how it might expand your own horizons.

Angus Kennedy

Review in brief

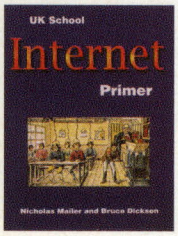
INTERNET: CYBERIAN CONNECTION – £16.99

Pro: Fine if the word 'Internet' is a new one to you.

Con: Not quite so useful if you've read a paper or watched TV in the last year.

Contact: Purple Training
Tel: 0181 742 0607
Email: purplet@dircon.co.uk
Web: http://www.dircon.co.uk/purplet/

Text book written for teachers



Schools in the UK are only just starting to stumble their way on to the Internet and this book's real strengths are that it's British; its authors know the education sector; and it has been published at all.

A standard description of the Internet is followed by chapters on email, Usenet and accessing information via FTP. The style is chatty and the authors succeed in making what is, to the uninitiated, a difficult concept, clear and understandable.

The ideas for using the Internet in the curriculum are sound if not particularly original, but there are some handy hints for keeping those phone bills down, which will be appreciated.

Censorship comes high up the table of contents and rightly so, because it is an issue of major concern in schools. The advice is sensible – nothing makes an online site more attractive to pupils than banning them from visiting it – and there are several practical suggestions for regulating access.

It has to be said that this book's production values aren't high. The photographs and screenshots are grainy and the cartoons, which are somewhat reminiscent of Access ads, are certainly not to my taste. However, I've yet to find a book which successfully communicates how visually exciting the Net can be and these things are unlikely to put educationalists off.

UK Schools Internet Primer is really only a starting point but it fits the bill very nicely because that's exactly what schools are seriously in need of at the moment.

Any teacher wondering whether they and their students should join the Internet community should get hold of a copy.

Lisa Hughes

Review in brief

UK SCHOOLS INTERNET PRIMER – £8.50

Pro: An excellent introductory overview aimed specifically at education.

Con: Has a rather home-made feel.

Contact: Koeksuster Publications
Tel: 0181 959 3321
Email: info@koekie.demon.co.uk

INTERNET SHOP

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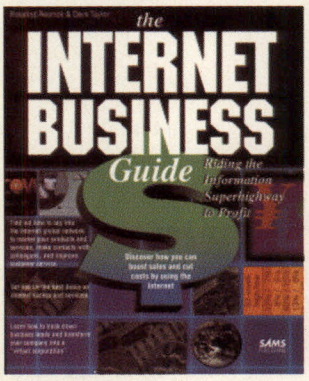


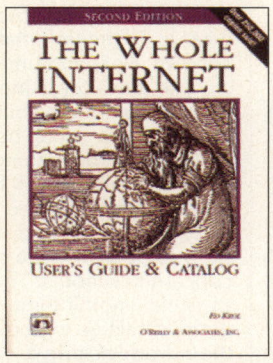
The Internet Business Guide
Rosalind Resnick & Dave Taylor, 418pp, Sams Publishing, £22.95

Subtitled *Riding the Information Superhighway to Profit,* this book provides a comprehensive round-up of the business that was being conducted on the Internet during 1994. The issues addressed by the authors include:

- Ways to use the Internet successfully to market your products and services
- How to create an Internet database, customer support centre and cyber-storefront
- Boosting sales, cutting costs and tracking down business leads by using the Internet
- Protecting your organisation from hackers, crackers and vandals
- How well businesses on the Internet have been doing

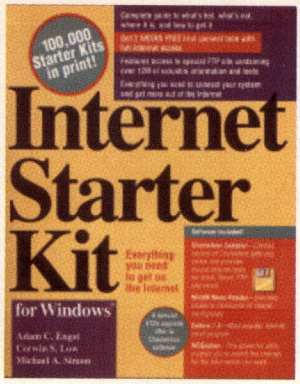
Internet UK,
Ivan Pope, 298 pages, Paramount Publishing, £19.95

The first book all about the Internet from a non-US perspective. Ivan Pope is one of the true pioneers in this field in the UK, and his book offers a wide-ranging account of how the Internet scene has been developing. There's coverage of what some of the main access providers have to offer, together with lists of British-based Usenet groups and commercial domain names. One month's free Internet access from CityScape comes free with the book.



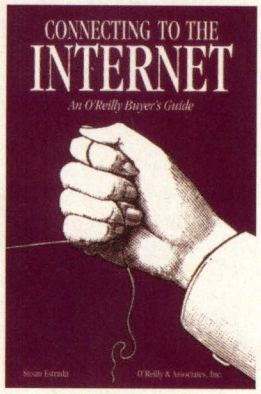
The Whole Internet User's Guide & Catalogue, *Ed Krol, 558 pages, O'Reilly & Associates, £18.50*

This is an absolute classic – and deservedly so. The second edition of *The Whole Internet Catalogue* has been updated to include sections about the use of modern Web browsers for storing and distributing information. It also includes updated coverage of multimedia email (MIME), Gopher, WAIS and Archie. There's also extensive coverage of what's legal, or at least tolerated, on the Internet, and what's not.



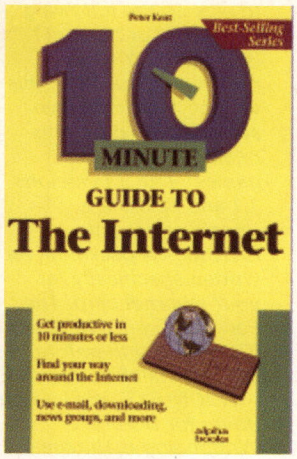
The Internet Starter Kit, ***Adam C Engst et al, 900+ pages, Hayden Books, £27.50***

One of the classic door-stoppers, this book tells you almost all you're ever likely to want to know about the Internet, in two versions: one for Windows-based PCs, the other for Apple Macintosh computers. Unlike the more cerebral *Unleashed*, this is a very practical book that covers all the history and the 'how to' of all the main Internet services. Also included is a disk containing Internet utility software.



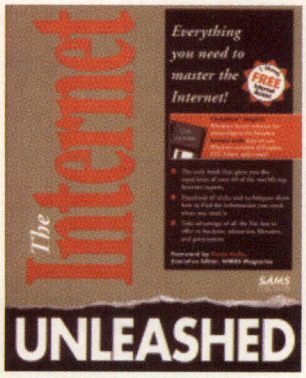
Connecting to the Internet, ***Susan Estrada, 176 pages, O'Reilly & Associates, £11.95***

An alternative to the popular *10-Minute Guide*, This book provides practical advice in a concise and carryable format. Topics include how the Internet works; understanding network performance; how to use the Internet; and how to use a network provider. It's US-biased, but a useful general introduction.


Best-Selling Series
10 MINUTE GUIDE TO
The Internet
Get productive in 10 minutes or less
Find your way around the Internet
Use e-mail, downloading, news groups, and more
alpha books

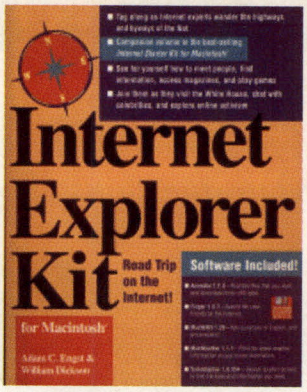
The 10 Minute Guide to the Internet, ***Peter Kent, 164 pages, Alpha Books, £9.95***

One of our most popular books, the *10-Minute Guide* has been a big hit at the conferences and exhibitions we've attended. Low on page count, but extensive and concise, for once the publisher's blurb 'Get productive in 10 minutes or less' is a reasonable claim. Topics covered include: how to connect; sending and reading email; finding files; working with news; and listserv groups; and more.



The Internet Unleashed, ***Various authors, 1398 pages, Sams Publishing, £40.95***

The biggest of them all, *Unleashed* includes articles by all the Internet world's top movers and shakers. You'll never get it into your brief case, but you'll find it hard to ignore. It's impossible here to give even a flavour of its content, but suffice to say, it has contributions from every major Internet provider, including several from outside the UK. Also included is a disk containing Internet utility software.



The Internet Explorer Kit, ***Adam C Engst et al, 400+ pages, Hayden Books, £27.50***

Sequel to *The Starter Kit*, this is also in Windows and Apple Macintosh editions. A slimmer volume, but still over 400 pages, the focus is much more on proper social behaviour on the Internet and how to set up your own web server and news groups. This also includes Internet utility software.

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❑ Internet CD *SRI*	£39.50
❑ Internet Explorer's Kit for Macintosh *Engst*	£27.50
❑ Internet Explorer's Kit Software *Sams*	£63.50
❑ The Internet Message *Rose*	£34.95
❑ Internet Quickstart *Que*	£19.95
❑ Internet Resource Quick Reference *Que*	£16.45
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❑ Internet Starter Kit for Windows *Engst*	£27.50
❑ Internetworking With TCP/IP Volume 1 *Comer*	£23.95
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❑ Riding the Internet Highway *Fisher*	£27.50
❑ TCP/IP Networking, Arch. Admin. and Programming *Martin*	£37.95
❑ Teach Yourself the Internet *Randall*	£25.50
❑ The Internet Business Guide Resnick & Taylor	£22.95
❑ Using the Internet Special Edition *Tollhurst*	£29.95
❑ Whole Earth Online Catalogue *Rittner*	£22.95
❑ Your Internet Consultant *Savetz*	£22.95
❑ The Whole Internet User's Guide and Catalogue	£18.50
❑ The 10 Minute Guide to The Internet	£9.95
❑ Connecting to the Internet	£11.95

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❑ I enclose a cheque/PO made out to EMAP Business Communications

❑ Invoice my company ❑ Please charge my MasterCard/Visa/Access credit card

No: ..... Expiry Date: .....

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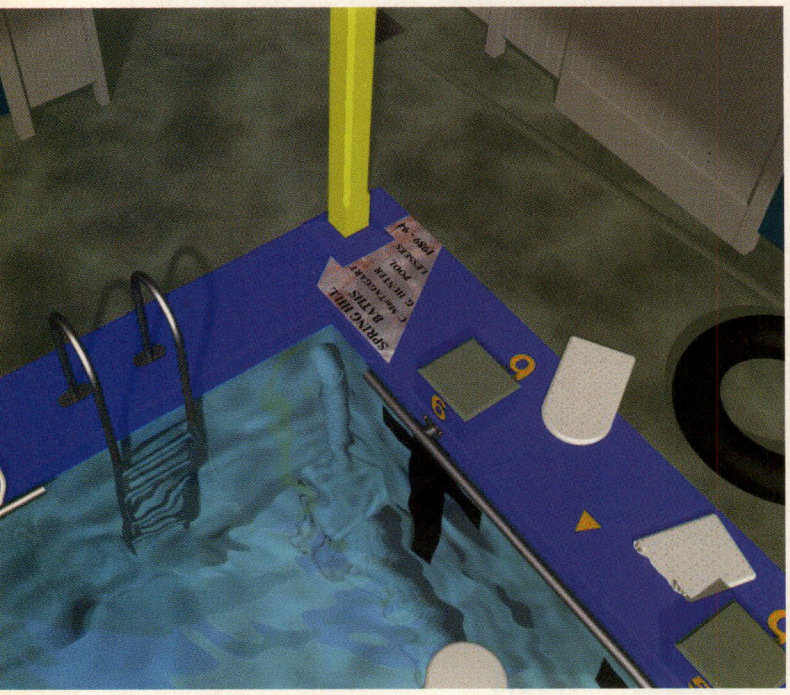
Frequently asked Questions

Don't be afraid to ask, because this is where agony uncle Marc Nicholas answers all your questions about the Internet. Send your queries to internet@computing.emap.co.uk



MAIL MANAGEMENT

Q I am having problems managing my incoming email. Do you have any suggestions? What software could I use to sort it for me?

A *Eudora (available for both Macintosh and Windows) is an excellent choice if you have access to a POP3 mailbox (most of the major Internet providers can provide POP3). It also happens to come in a freeware version, which makes it even better!*

Eudora will allow you to file email in separate folders, plus you will be able to see at a glance which messages you have replied to.

Many FTP sites carry Eudora, but if you can't find it, FTP to ftp.qualcomm.com. A commercial version of the program with even more features is also available.

OPEN ALL HOURS

Q We have a leased line connection to the Internet. If I leave a Web page open, does it cost money or use up bandwidth while I am not using it?

A *A Web connection only consumes bandwidth when you are making a request. A page can sit open indefinitely and your machine will not poll the remote server. Most Internet providers sell leased circuits on the basis that you pay a flat fee for unlimited usage. Therefore you would not normally incur any charges even if polling was taking place.*

PLEASE MR POSTMASTER

Q Could you explain how to obtain a listing of email addresses? We do not have a full Internet connection yet and we are currently using email via GreenNet.

A *Currently there is no way to obtain a complete list of email addresses for Internet users. If you believe some figures, there could be as many as 30 million people with email addresses accessible from the Net. This would make for a fairly large directory!*

There are two ways to try and track down email addresses. The first is to write to the postmaster at the site the user is on (if you know it). The normal format is postmaster@domain, *although some sites might (wrongly) use the words mail or SMTP before the @ symbol instead.*

The second and less successful way is to look through a copy of the Internet White Pages. This book lists the names and email addresses of people who have posted to Usenet newsgroups.

Featured FAQ

For an exstenive list of available FAQ files, point your Web browser at http://www.cis.ohiostate.edu/hypertext/faq/usenet/FAQ-List.html

THE TCP/IP INTERNET DOOMER'S FAQ

Q How do I play DOOM over the Internet?

A *DOOM across the Internet is made possible by a neat little freeware program called iDOOM. iDOOM uses the UDP protocol (part of the TCP/IP protocol suite) to send DOOM game information between multiple machines on the Internet.*

Q I want to play DOOM over the Internet using iDOOM. What hardware do I need?

A *To successfully play DOOM across the Internet, you will need the following hardware: – A machine capable of playing DOOM (D'OHH!) – A network interface card (NIC). And not just any old NIC, mind you – your NIC must be supported by a packet driver if you wish to use it to play Internet DOOM. Usually this means that your NIC must be an ethernet card, although iDOOM has been successfully played over token ring. This document assumes that your PC is already equipped with a suitable NIC, although it may currently be in use for some other non-TCP/IP function (such as a node on a Novell network). – A direct connection to the Internet. If there is a modem somewhere in the link between your PC and your opponent's PC, this FAQ is not for you. Although it is possible to play Internet DOOM over a modem link (either by dialing up to a UNIX machine and using IHHD or via SLIP/PPP).*

Q OK, I've got all the hardware. What software do I need?

A *In addition to the hardware requirements, some software is also required to round out your the package. Before you can play, you'll need to pick up the following: – DOOM 1.2 or higher (1.7 is STRONGLY recommended, since this version seems to have solved some problems related to network games). DOOM versions 1.1 and below are incapable of using iDOOM. – A packet driver written specifically for your ethernet card. The Packet Driver is what lets iDOOM (and therefore DOOM) "talk" to your NIC – iDOOM.EXE, the Internet driver for DOOM. Written and maintained by Scott Coleman* (asre@uiuc.edu) *and Jay Cotton* (jay@calc.vet.uga.edu). *Last updated 16/10/94*

SLIPPING AND SLIDING

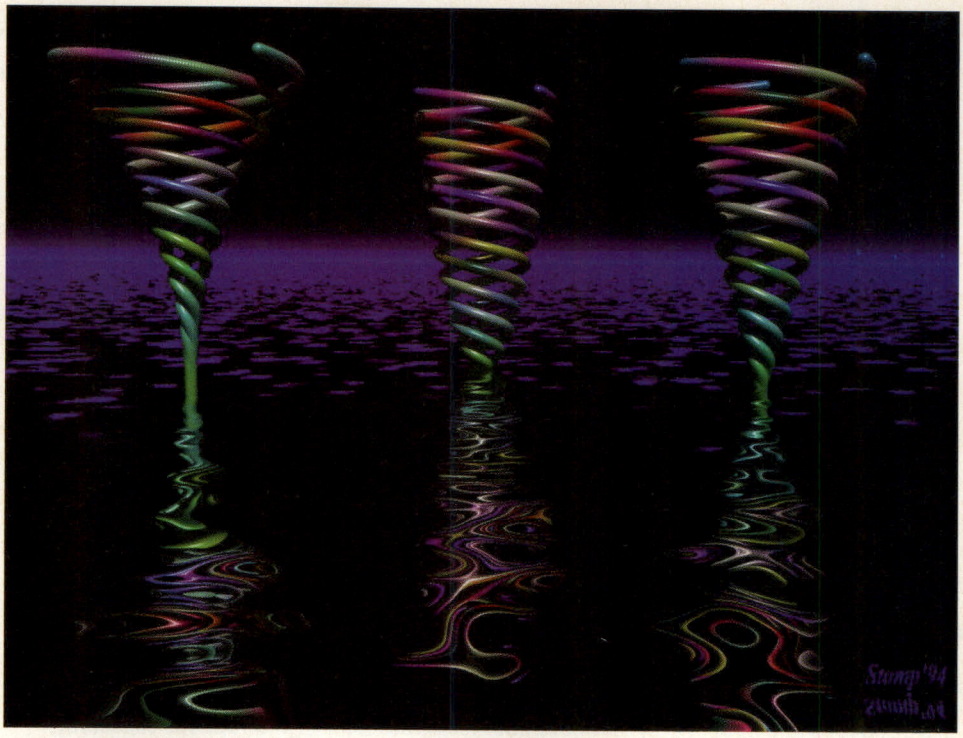
Q I am a Compuserve user. Should I upgrade to a full Internet account or can I get by with what I have got? I hear that Compuserve is going to offer full TCP/IP connections soon.

A *Compuserve will indeed start offering SLIP/PPP connections soon, bringing its level of Internet connectivity on a par with other Internet providers.*

At the moment, its Internet services are limited to an email gateway and newsgroup access. If this is all you need, then it is a viable option. If you wish to access direct Internet services such as World Wide Web or use your own choice of email software, then you would be better off switching to a full Internet provider.

Internet providers can offer you unlimited SLIP or PPP access for flat rates of between £10 and £25 a month, which might end up being cheaper than your total Compuserve bill.

and Answers...



ILLUSTRATIONS BY JOHN HOOPER http://tomservo.st.hmc.edu/files/others/hooper/hooper.html

STAYING ATTACHED

Q Can I send a file attached to an email message over the Internet to a CompuServe subscriber ? I am concerned that the attached file will arrive garbled.

A *You can. The best way to do it is to attach the file to your email as a UUencoded attachment. The user at the Compuserve end can then save the message and run it through a UUdecoder to rebuild the file.*

Many UUdecoders/ encoders exist for Macintosh, PC and Unix systems. Just check your local FTP site.

BEST ROUTE TO SOHO

Q I work from home a lot. Am I better off getting a separate Internet account for home, or should I dial in to my office and use my company's connection?

A *That really depends on your needs and your exact situation. For example, if your company is only a local phone call from your home and the nearest Internet provider is not, then that might be good justification for dialling the office. Also, the systems in place at your office may also be able to dial you back rather than the call be placed on your bill.*

However, using an Internet Provider might give you access to higher-bandwidth services such as ISDN – useful if you are moving large amounts of data around.

EMAIL ON THE MOVE

Q Can I connect to the Internet using my portable computer and mobile telephone?

A *Yes! Several companies offer cellular modems that connect to cellular phones. Both the Motorola TAC range and the Nokia 121 can be fitted with data 'adaptors' allowing a modem to be connected. However, you might want to use a fully-fledged cellular modem rather than a normal laptop modem as they provide more resilience to cellular's drop-outs and other quirks.*

Running PPP (point to point protocol) or SLIP (serial line interface protocol) through a cellular modem is just like using any other modem. Unfortunately, the bandwidth of analogue cellular phones means that you will be lucky to get more than 9600bps.

MAKING MOVIES

Q Can I do video- and audio-conferencing across the Internet?

A *If you own a Macintosh computer with a SuperMac Video Spigot or a Windows PC with a Microsoft Multimedia-compatible video card, then CU-SeeMe from Cornell University is a cheap and cheerful way to send live video across the Net. Even though the picture is only monochrome, the results can be surprisingly good and you can talk to more than one location at once. The only drawback on CU-SeeMe is that it eats bandwidth. A dial-up connection jitters and breaks up, while things get better on a 64k circuit.*

A quick Archie search for the file showed bells.cs.ucl.ac.uk *carrying the CU-SeeMe software in the /mice/videoconference directory. Alternatively, you might choose to FTP it directly from* gated.cornell.edu *in the* /pub/video *directory (login as anonymous, with your email address as the password).*

As far as sound goes, you just need a standard Macintosh, but unfortunately for PC users CU-SeeMe does not support sound.

LOOKING OUT FOR JANET

Q Sorry if this one's a bit of drongo type FAQ but how do I go about accessing BIDS and JANET-type academic services from my humble BBS service provider?

When I address this message to you I need to insert a (Fidonet?) number, 2:2501/102. Does this mean I have very restricted access to the Net. I am very confused with terms like BBS, UUCP etc. Any advice would be great.

A *Many BBS actually gateway their mail directly to the Internet rather than relying on Fidonet, etc. You may wish to check with your BBS Sysop to find out exactly how he forwards his mail to the Internet and the addressing scheme to use.*

BBSs normally have very restricted access to the Internet. You may find that only email facilities are available, although some also carry selected Usenet newsgroups.

UUCP (Unix-to-Unix Copy Protocol) is a way of transferring news and email files between systems in a 'batch' mode, ie all the files are transferred in one chunk and then the systems disconnect and redial again at a pre-determined time.

WINDOW SHOPPING

Q In the first issue of **INTERNET**, you say that the CityScape software (Mosaic plus an IP stack) needs 'an IBM compatible capable of running Windows 3.1'. I have tried Mosaic, NetScape and Cello on my 286 (running Windows 3.1 in 3Mb RAM) and none of them work. I get application errors saying 'illegal instruction'. I assume this means that these Web browsers expect to see a 386 at least, and expect Windows to be running in protected mode. Am I right? Its interesting to note that both Trumpet WinSock and HTTP run on my 286.

Are there any WWW browsers that I can run on my 286? If not, do you know of any software I can use to display local HTML files?

A *Unfortunately, most Windows software will not run without protected mode. It is true that you can start-up Windows on a 286 PC, but doing anything once it has started can prove difficult!*

Lynx for DOS will run on a 286, but will not provide direct support for graphics, although they can be saved for later viewing in an external package.

US GOVERNMENT

Q I really want to register an .org domain for my BBS. How do I go about doing this?

A *The* .org domain *suffix is governed by the InterNIC in the US. FTP to* ftp.internic.net *or point your Web browser at* www.internic.net *to pickup the application forms.*

You will need to provide details of your site plus the hostnames and IP addresses of at least two domain name servers. Your Internet provider will be able to help you with this information.

SURFING IN CIX

Q In your magazine you have lots of interesting HTTP addresses to contact but when I type http://www.nhm.ac.uk from the mail prompt all I get is an error message. If I type it at the main prompt I still get an error message. What is the key to get into HTTP?

A To use the Web addresses (those starting with http://*) on Cix, you need to type go internet from the main prompt. This will give you access to various Internet applications, including the Web client (which happens to be Lynx, a text only browser).*
Once here type WWW, and the Cix home page will be displayed, or you can go to a different site by hitting the G key and entering the address as written in the magazine. See page 54 of this issue for more info.

INDONESIAN PROMISE

Q I am based in Indonesia and resource material is very scarce here, consequently I am having a great deal of difficulty getting started. Even what I presume to be simple things like getting hold of Mosaic or Cello appear very complex issues from here. I've managed to work out how to execute http:// commands but for the life of me I cannot find a way to access FTP areas. Could you please advise the best method of overcoming these trivial difficulties. Thanks very much in advance for your assistance.

A If you have access to a Web browser, you can access FTP sites by typing ftp://sitename *into the open location dialogue box, if you want to use a dedicated FTP client, take a look at page 54 of this issue for useful addresses of where to find essential software.*

MOVING INFORMATION

Q In the October edition of Internet, you talk about an Internet service called For Your Information.

I tried to connect to this FTP server several times from different platforms, using the address ftp.nic.nnsc.nsf.net, but all I received was the message 'unknown server'.

A The address has changed, try ftp://nic.ddn.mil/rfc/

<ends>

Legal Questions and Answers

Business and the Internet will be awkward companions until a few legal infrastructure issues are ironed out. The Internet is too new and it moves too fast for the staid processes of the law to get ahead or even keep up most of the time. With this column, written and researched by Paul Lavin, who has a doctorate in jurisprudence, we will try to provide practical guidance for business Internet users where the law is unsettled.

Q What is the legal obligation of an Internet service provider when important email goes missing or your connection is interrupted?

A While all and sundry are hyping the Internet as tomorrow's vital business communications conduit, there are pitfalls that exist today if your Internet business communications are interrupted - you may not have Internet access for some period of time or important email messages, sent by you or addressed to you, vanish into the ether.

While it is a fundamental principle of our common law that any harm must have its redress, there is little so far that an Internet user can do, as a matter of practicality, about the quality of Internet communications. In the sweet bye and bye, once our law makers cotton onto the importance of the Internet in commerce, there will be statutory law to lay out the legal minutiae. Don't hold your breath, however.

Your legal relationship with your Internet service provider is governed by the terms and conditions (Ts and Cs) of your contract with them. Typically this is a pre-printed document, often in impressively small type and couched in the sort of language that have kept lawyers busy since before Hadley v Baxendale 200-odd years ago.

Pipex, who positions itself as the most professional business Internet service provider has fairly typical Ts and Cs. That means that they are largely written to suit Pipex and leave users with very little that they can get stroppy about unless the connections fails continuously.

Pipex says that any condition or warranty which might be implied or incorporated within its contract by reason of statute or common law or otherwise is expressly excluded as far as the law permits. In plain language, they ain't promising nothin' unless they are made to by law.

Pipex promises to use all reasonable endeavours to provide a prompt and continuing service but it will not be liable for any loss of data resulting from delays, non-deliveries missed deliveries, or service interruptions caused by events beyond its control. This of course means that any interruptions that ARE within its control are actionable - but proof may be impracticably difficult.

In no circumstances whatsoever (its words) will Pipex be liable for economic or consequential loss. By this it is seeking to limit any damages done to you to no more than the value of the service that they are charging you for, a fairly standard clause in commercial contracts. And Pipex specifically excludes any warranty as to the quality or accuracy of the information received via Pipex Internet services.

Although bluntly worded the above is fair enough, because Pipex obviously can't take on the obligation to insure that the Internet works every time, all the time, for every one of its customers. But if this is the language that the most business-orientated Internet supplier sticks to its clients (these Ts and Cs are often known as contracts of adhesion - they stick 'em to you), what can you expect from less business-centric providers?

Here's what you can do: if you want to use your Internet connection for vital business correspondence, insist that the recipient confirm receipt of the message immediately. If you don't hear from them, immediately, you will know that something has gone awry.

Follow up crucial email with faxes or snail mail or telephone calls as appropriate in instances where absolute certainty of receipt is required. Make printed copies of your vital email just as soon as you have sent it, for the previous reason as well as for your filing clerks continued employment.

The probative value of an email in court proceedings has not been settled yet but don't count on it being very high for some time - it passes through too many hands and is too easily altered. Getting the contents of email admitted as evidence in a legal barney will take the cooperation of the other side in the suit - and that is something you can't really count on.

If the misdirection of valuable email is the fault of your service provider, then you are stuck with the terms and conditions you signed. For that reason, make sure that any terms and conditions that YOU have, are made known to the Internet service provider when you sign up. In writing, please!

A reasonable T and C, at least from the point of view of a service subscriber, would be the application of liquidated damages in the event of a documented service interruption. Rather than trying to figure out how much each service interruption actually costs, you and the Internet service provider could agree on an amount that would be fair.

For instance, if the line was down less than an hour, it could be worth £50, but if it lasted more than two hours it would amount to the daily rate. This is probably only going to make sense on leased lines that cost a lot and also have more riding on them. The best Internet insurance is awareness of the limitations of service providers and the Internet in general. <ends>

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The glossary

Acronyms abound and the terminology can be confusing, but **THE INTERNET GLOSSARY** *makes sense of it all*

10BASE-T
The IEEE 802.3 specification for network cabling which specifies using unshielded twisted-pair cable running at 10 Mbps, with a distance limit of 100m per segment.
56 KB LINE
Actual capacity of a 64 Kbps channel.
64 KB CHANNEL
The lowest level of the digital hierarchy, a single 64 Kbps voice or data channel.

A

AGENT
A part of the system that performs information preparation and exchange for a client or server application.
ANONYMOUS FTP
A service that makes files available to the general Internet community, FTP allows files to be transferred to or from a host, without the need for a user ID on that host (also known as anon FTP).
ANSI
American National Standards Institute, a member of the International Organisation for Standardisation (ISO).
API
Application Program Interface, a set of calling conventions that defines how a service is invoked through a software package.
APPLICATION
Software that provides services such as electronic mail or file transfers.
ARCHIE
A service that provides a quick, easy way to scan the offerings of countless anonymous FTP sites.
ARPANET
Advanced Research Projects Agency Network, a packet-switched network developed in the early 1970s. The grandfather of today's Internet, it was decommissioned in June 1990.
ASYNCHRONOUS TRANSMISSION
A method by which data is transmitted from one communication device to another. Data is sent one bit at a time. Each character is framed by a start bit and a stop bit and is not dependent on the timing between the transmitter and the receiver.

B

BACKBONE
The primary connectivity mechanism of a hierarchical distributed system. All systems that connect to an intermediate system on the backbone are assured of connectivity to each other. This network does not prevent systems from setting up private arrangements with each other to bypass the backbone for reasons of cost, performance or security.
BASEBAND
A characteristic of any network technology that uses a single-carrier frequency and that requires all stations attached to the network to participate in every transmission. See broadband.
BAUD RATE
The actual frequency being used to transmit data. Often used incorrectly as an equivalent to bits per second (bps). For example, both ITU-T V.22bis (2400 bps) and V.22 (1200 bps) modems transmit data at 600 baud, but V.22bis modems use four bits per symbol and V.22 modems use two.
BBS
Bulletin Board Service, an electronic host system that posts news, discussion groups and email. BBSs are typically accessed via analogue dial-up modems.
BIT
A contraction of 'binary digit', the smallest unit of information in a binary number system. Eight bits are needed to create one byte or character.
BPS
Bits per second, the speed at which bits (electronic signals) are transmitted.
BRIDGE
A device that connects two or more physical networks and forwards packets between them. Bridges can usually filter packets, ie only forward certain traffic. Related devices are repeaters, which simply forward electrical signals from one cable to another, and full-fledged routers, which make routing decisions based on several criteria.
BROADBAND
The characteristic of any network that multiplexes various independent network carriers onto a single cable. Multiplexing usually occurs by dividing frequency. Broadband technology allows several networks to coexist on a single cable. Traffic from one network doesn't interfere with that from another because conversations happen on different frequencies, as on commercial radio systems.
BROADCAST
A packet-delivery system in which a copy of a particular packet is given to all hosts attached to the network. An example is ethernet.

C

CCITT
International Consultative Committee for Telegraphy and Telephony, previously a unit of the International Telecommunications Union (ITU) of the United Nations, now known as ITU-T.
CIX
Commercial Internet Exchange, a working consortium of carriers that provide Internet services to the commercial marketplace (not to be confused with the UK BBS).
CLIENT/SERVER MODEL
A common way to describe network services, the programs of those services, and the way they relate.
DATAGRAM
A packet that holds data to be transmitted on a network. See IP datagram.
DIAL-UP
Method of using PSTN or ISDN to connect computers over modems with remote lan access routers and/or terminal servers.

D

DNS
Domain Name System, the distributed name/address mechanism which is used in the Internet.
DOMAIN
Part of an Internet naming hierarchy. Syntactically, an Internet domain name consists of a sequence of names (labels) separated by full-stops; for example, `tundra.mpk.ca.us`
DOTTED-DECIMAL NOTATION
The syntactic representation for a 32-bit integer that consists of four eight-bit numbers written in base 10 with periods separating them. Used to represent IP addresses in the Internet, as in 192.67.67.20. See IP.

E

ENCAPSULATION
The technique used by layered protocols in which a layer adds header information to the protocol data unit (PDU) from the layer above. For example, in Internet terms, a packet would contain a header from the physical layer, followed by one from the network layer (IP), followed by another from the transport layer (TCP), followed by the application protocol data. See PDU, IP, TCP.
ETHERNET
A physical medium for transmitting lan traffic at speeds up to 10 Mbps.

F

FAQ
Frequently Asked Questions documents are files scattered around the Internet containing information on practically every subject. The logic is that if somebody needs to know something, chances are another user will already have found the answer.
FDDI
Fibre-Distributed Data Interface, an emerging high-speed networking standard. The underlying medium is fibre optics and the topology is a dual attached, counter-rotating token ring. You can spot FDDI networks by their orange fibre cable. See token ring.
FLAME
To express strong opinion and/or criticism of something, usually as an inflammatory electronic message.
FIDONET
A long-established network of electronic bulletin board services.
FINGER
A method of accessing a site to receive an automatic response.
FIREWALL
A network security device which, when penetrated, closes the gateway to the network.
FRAGMENTATION
The process of breaking down an IP datagram into smaller pieces to fit a given physical network's requirements. The reverse process is reassembly.
FRAME RELAY
A fast-packet technology that offers switched virtual transmission services at speeds up to T-1.
FREENET
Typically a local Internet access service and/or bulletin board service offered free of charge.
FTP
File Transfer Protocol, the Internet protocol (and program) used to transfer files between hosts.

G

GATEWAY
A computer system that transfers data between normally incompatible applications or networks. A gateway reformats the data to make it acceptable for the new application or network before passing the data on.
GOPHER
An interactive fileserver system that offers menu-based capabilities for browsing Internet resources.

H

HTML
HyperText Markup Language, a language for writing WWW pages.

I

IAB
Internet Activities Board, the technical body that oversees development of the Internet suite of protocols (commonly referred to as TCP/IP).
IEEE
Institute of Electrical and Electronics Engineers.
IESG
Internet Engineering Steering Group, the executive committee of the IETF.
IETF
Internet Engineering Task Force, one task force of the IAB. It is responsible for solving the short-term engineering needs of the Internet and has more than 40 working groups.
IGP
Interior Gateway Protocol, the protocol used to exchange routing information between collaborating routers on the Internet.
INTERNET
If not capitalised, internet refers to any collection of distinct networks interconnected by routers that allow the networks to operate as one internetwork.
INTERNET
When capitalised, Internet refers to the worldwide network of networks connected to each other using the IP protocol suite. The Internet provides file transfer, remote login, electronic mail, news and other services.
To be on the Internet, you must have IP connectivity, ie be able to ping other systems. Networks with only email are not actually classified as on the Internet.
INTERNET ADDRESS
A 32-bit address assigned to hosts using the TCP/IP protocol. See dotted-decimal notation.
INTERNET MAIL AGENT
Software that allows two or more electronic mail systems to connect and transfer data.
IP
Internet Protocol, the network-layer protocol for the Internet protocol suite, is the most important protocol on which the Internet is based. It allows a datagram to traverse multiple networks on the way to its final destination.
IP DATAGRAM
The fundamental unit of information passed across the Internet, an IP datagram contains the following: source and destination addresses, data and fields that define such things as the datagram's length, the header checksum, and flags to say whether the datagram can be, or has been, fragmented.
IPX
Internetwork Packet Exchange, the underlying protocol in Novell NetWare.
IRC
Internet Relay Chat is best described as a cyberspace version of CB radio. It is a real-time talk system that's split into 'channels'. By joining a specific

channel, you can participate in that public discussion.

ISDN
Integrated Services Digital Network, an emerging technology being offered by the telephone carriers of the world. ISDN combines voice and digital network services into a single medium, making it possible to offer customers digital data as well as voice services through a single wire, at speeds of up to 64 Kbps per channel.

ISO
International Organisation for Standardisation.

ITU-T
An organisation with representatives from the PTTs of the world which produces technical standards.

K

KERMIT
A popular file transfer and terminal emulation program.

L

LAN
Local Area Network, a group of computers that are located in one area and connected together.

LEASED LINE
A dedicated circuit (private telephone line) between two locations, which is constantly available for transmission of data or voice.

M

MAIL GATEWAY
A machine that connects two or more electronic mail systems (especially dissimilar ones on two different networks) and transfers messages between them. Sometimes the mapping and translation is quite complex, requiring a store-and-forward scheme, whereby the message is completely received from one system before it is transmitted, after translation, to the next system.

MARTIAN
Humorous term applied to packets that turn up unexpectedly on the wrong network because of bogus routing entries. Also used as a name for a packet with an altogether bogus (unregistered or ill-formed) Internet address.

MHS
Message Handling System, the system of message-user agents, message-transfer agents, message stores and access units that together provide OSI electronic mail.

MODEM
Data communications equipment that converts a computer's digital signals to analogue signals that can be transmitted over standard telephone lines. Digital and cellular modems also allow data to be transmitted over both fibre optic and microwave media.

MTA
Message Transfer Agent, an OSI application process used to store and forward messages in the X.400 message handling system. Equivalent to Internet mail agent.

MTU
Maximum Transmission Unit, the largest possible unit of data that can be sent on a given physical medium. For example, the MTU of ethernet is 1500 bytes. See fragmentation.

MULTICAST
A special form of broadcast in which copies of the packet are delivered only to a subset of all possible destinations. See broadcast.

MULTI-HOMED HOST
A computer connected to more than one physical data link, that may or may not be attached to the same network.

N

NAME RESOLUTION
The process of mapping a name into the corresponding address. See DNS.

NETBIOS
Network Basic Input-Output System, the standard interface to networks on PC systems.

NETWORK ADDRESS
See Internet address.

NIC
A Network Interface Card is the hardware in a PC that connects it to the network, ie ethernet adapter.

NIC
The original Network Information Centre was tasked to serve the ARPANET communities. Today many NICs are operated by local, regional and national networks around the world. Such centres provide user assistance, document service training and much more.

NMS
Network Management Station, the system responsible for managing a network or subnetwork. It talks to network management agents residing in the managed nodes via a network-management protocol. See agent.

NOC
Network Operations Centre, any centre tasked with the operational aspects of a network, ie monitoring, troubleshooting and assisting users.

NODE
A computer attached to a network (also called a host).

O

OSI
Open Systems Interconnection, an international standardisation program to facilitate communications among computers from different manufacturers. See ISO.

OSPF
Open Shortest Path First, a proposed standard IGP for the Internet.

P

PACKET
Data encapsulated within a network layer header and trailer for transmission over a network.

PDU
Protocol Data Unit, a segment of an SNMP message which contains the actual data.

PING
Packet Internet Group, a TCP/IP program used to test reachability of destinations by sending them an echo request and waiting for a reply. It is commonly used as a verb: 'Ping host X to see if it is up!'

POP
A Point of Presence is a local network node, set up by a service provider, ie. the physical location where your computer connects to the Internet.

PORT
The abstraction used by Internet transport protocols to distinguish among multiple simultaneous connections to a single destination host. Also the term for a physical input/output (I/O) channel.

PPP
Point-to-Point Protocol, the successor to SLIP, it provides router-to-router and host-to-network connections over both synchronous and asynchronous circuits. See SLIP.

PROTOCOL
A formal description of message formats and the rules two or more systems must follow to exchange those messages.

PSN
Packet-switched Node, the modem term used for nodes in the ARPANET or a Packet-Switched Network.

PSTN
Public Switched Telephone Network.

PTT
Poste de Telephony and Telegraph, the term for national or provincial bodies which provide in-country communications services, including voice, data, satellite and video.

R

REPEATER
A device that propagates electrical signals from one cable to another without making routing decisions or providing packet filtering. See bridge, router.

RFC
Request For Comments, the document series, begun in 1969, that describes the Internet suite of protocols and other related experiments.

ROUTER
A device responsible for making decisions about which of several paths network (or Internet) traffic will follow. The router uses a protocol to gain information about the network, and it uses routing metrics algorithms to choose the best route. See gateway, bridge, repeater.

S

SERVICE PROVIDER
A commercial or publicly funded company that provides connectivity to the Internet through dial-up, leased-line or switched-digital services.

SHELL
A Unix software program that simplifies command line information processing from a terminal.

SLIP
Serial Line IP, an Internet protocol used to run IP over serial lines. It is now being replaced by PPP. See PPP.

SMTP
Simple Mail Transfer Protocol, the Internet electronic mail protocol.

SNMP
Simple Network Management Protocol, the network management protocol of choice for those internets which are TCP/IP-based.

SQL
Structured Query Language, the international standard language which is used for defining and accessing relational databases.

SWITCHED DIGITAL
A dial-up transmission service over digital lines such as ISDN. See ISDN.

SYNCHRONOUS TRANSMISSION
A method by which data is transmitted from one communications device to another. A timer at one end of the communication line instructs the device to release the data at a pre-set time interval.

T

T1 OR T-1
A type of digital carrier system transmitting voice or data at 1.5 Mbps. A T1 carrier can handle up to 24 multiplexed 64 Kbps digital voice or data channels.

T3 OR T-3
A type of digital carrier system transmitting voice or data at 44.6 Mbps. A T3 carrier can handle up to 28 multiplexed T1s or 672 multiplexed 64 Kbps digital voice or data channels.

TA
A Terminal Adapter is a device that connects a standalone PC or a network to a wan transport media (especially an ISDN link). The function that it performs is essentially quite similar to that of a modem.

TCP
Transmission Control Protocol, the major transport protocol in the Internet suite of protocols. See IP.

TELNET
The virtual terminal protocol in the Internet suite of protocols, it allows users of one host to log into a remote host and interact as normal terminal users of that host.

TFTP
Trivial File Transfer Protocol, a simplified version of FTP, allowing the file transfer from one computer to another over a network.

THREE-WAY HANDSHAKE
The process whereby two protocol entities synchronise during connection establishment.

TOKEN RING
A lan protocol made up of individual links forming a circle. A token is passed around the ring and only the device that has the token can send data.

TRANSCEIVER
Transmitter-receiver, the physical device that connects a host interface to a local area network such as ethernet.

U

UDP
User Datagram Protocol, a transport protocol in the Internet protocol suite. UDP, like TCP, uses IP for delivery. However, unlike TCP, UDP allows datagrams to be exchanged but without a delivery guarantee.

UUCP
Unix-to-Unix Copy Program, a protocol used for communication between consenting Unix systems.

V

VERONICA
An indexing tool that allows Internet users to keep track of the Gopher menus offering specific services.

W

WAIS
Wide Area Information Server, originally a joint project of Apple, Thinking Machines, and Dow-Jones, WAIS servers allow users to simultaneously search multiple databases on the Internet.

WAN
Wide Area Network, a network that interconnects multiple systems over various geographic locations.

WWW
World Wide Web, a hypertext system used for locating Internet resources.

X

X.25
An ITU-T standard that defines the interface between data terminal equipment (DTE) and data circuit termination equipment (DCE). The standard also defines the packet format for data transfers in packet-switched networks.

X.400
The ITU-T (and OSI) set of standards for providing electronic mail over an open network. See MHS.

X.500
The ITU-T (and OSI) set of standards for providing directory services across an open network.

A large proportion of this glossary was taken from *The EDU-Net Internet Primer: A Quick Reference Guide and Introduction to the Internet.* It was produced by Telebit Corporation, and written by Greg Dumas. Copies of the Primer can be obtained by sending email to k t ho mas@telebit.com

INTERNET

Access Pro

Don't sign up for Internet services until you'

To make our Access Provider Guide even easier to use, we've split it down into three sections.

The first – *Who they are* – gives you contact details for the providers listed over the page. The *Where they are* chart lets you see at a glance which providers have aPoint of Presence near you. Then, *What they offer,* gives you all the information you need to make a decision.

Make sure you talk to several providers and find out what they advise for your situation.

Also, try to make a list of possibilities for your preferred email address, as this is one of the first decisions you will have to make when signing up. Make sure it represents you or your company. Keep it short, and above all memorable.

If your name is Nick Dudley and you work at Oakland Elevators, for instance, you might choose the address dudley@oakland.co.uk, or maybe nickd@oakele.co.uk. The last part of the address will probably be set by the provider (ie .co.uk), unless you pay extra, so it is the front two elements you need to consider. Also, many services allow you to change the naming information before the @ symbol (ie dudley), but if you decide at a later date that your domain name (oakland.co.uk) is inappropriate, it will cost you to change it. A good service provider will help you make this decision at the outset .

The information in these pages is divided into the following columns:

Company name: This is the trading name of the company that runs the Internet access service.

Telephone number: This is the telephone number each company prefers to use for sales enquiries.

Email address: This is the email address each company prefers to use for sales enquiries.

Who they are – Access Providers' contact details

Name	Telephone no.	Email address	Web page
Almac	0324 666336	alastair.mcintyre@almac.co.uk	www.almac.co.uk
BBC Networking Club	0181 576 7799	info@bbcnc.org.uk	www.bbcnc.org.uk
Byson Computers	01635 869480	Ian@Byson.demon.co.uk	—
BTnet	01442 295828	adrian.edwards@bt.net	www.bt.net
Celtic Internet Services	01633 815550	enquiries@celtic.co.uk	—
CityScape Internet Services	01223 566950	sales@cityscape.co.uk	www.cityscape.uk
Compulink Information eXchange (CIX)	0492 641961	cixadmin@cix.compulink.co.uk	www.compulink.co.uk
Compuserve	0800 289378	70006.101@compuserve.com	ww.compuserve.com
Delphi Internet	0171 757 7080	ukservice@delphi.com	www.delpi.com
Demon Internet	0181 371 1234	sales@demon.net	www.demon.co.uk
Dungeon Network Systems	0336 386445	dale@dungeon.com	www.dungeon.com
Easynet	0171 209 0990	admin@easynet.co.uk	www.easynet.co.uk
ElectricMail	0223 420193	info@elmail.co.uk	www.elmail.co.uk
EUnet GB	01227 266466	sales@Britain.EU.net	www.britain.eu.net
ExNet Systems	0181 244 0077	info@exnet.co.uk	—
Foremost Training	0141 248 6377	donald@scotnet.co.uk	—
Genesis Project	01232 231622	sales@gpl.com	www.gpl.net
GreenNet	0171 713 1941	support@gn.apc.org	—
Leaf Distribution	01256 707777	sales@leaf.co.uk	—
Lunatech Research	01 734 791900	infor@luna.co.uk	www.luna.co.uk
Mari Computer Systems	0191 490 1515	sjt@mari.co.uk	—
MKBBS	01908 345780	sysop@mkbbs.co.uk	—
NetKonect	0171 345 7777	info@netkonect.co.uk	—
On-Line Entertainment	0181 558 6114	mike@mail.on-line.co.uk	—
Paragon Software	01635 861111	paragon@parasoft.co.uk	—
Pavilion Internet	01273 607072	info@pavilion.co.uk	www.pavilion.co.uk
PC User Group	0181 863 1191	info@win-uk.net	www.ibmpcug.co.uk
Pipex	01223 250120	sales@pipex.net	www.ws.pipex.com
Poptel	0171 249 2948	admin&mcr1.poptel.org.uk	www.poptel.org.uk
RedNet Limited	0494 513 333	info@red.net	www.rednet.co.uk
Research Machines	01235 826000	tclark@rmplc.co.uk	www.rmplc.co.uk
The Direct Connection	0181 317 0100	helpdesk@dircon.co.uk	www.dircon.co.uk/index.html
Total Connectivity Providers	0703 393392	sales@tcp.co.uk	www.tcp.uk.co
U-NET	01925 633144	hi@u-net.com	www.u-net.com/
Zynet	01392 426160	zynet@zynet.co.uk	www.zynet.co.uk/

vider Guide

ve consulted this comprehensive buyers' index

Web page: If the service provider has a page on the World Wide Web, this is where to find it.
Points of Presence: The Points of Presence (POP) chart shows in where providers offer local access.
Service name: Often the name of the actual service differs from the company name.
Start-up cost: This is a one-off charge paid when a user subscribes to the service.
On-going costs: This is the monthly or yearly charge paid for subscription to the service.
Type of connection: This is an important entry, as it shows which providers are offering direct Internet access (IP), those that are offering bulletin board services (BBS), and those offering email and/or Usenet only (UUCP). Most companies supplying UUCP offer an upgrade path to full IP connection.
Access medium: Indicates which access methods are supported by this particular service – dial-up modem, ISDN, leased line or X.25.
Aimed at: This entry indicates who the company is aiming a particular service at – home users (h), small businesses (s) or large corporates (l).
Services available: This section is largely irrelevant for full IP connection, as the applications themselves are all available irrespective of the provider. For shell or BBS accounts, though, each service is offered at the discretion of the service provider.
Details of service: This is additional information you may find helpful when deciding which provider to talk to first.

Access providers should send up-to-date information about their services to: providers@emap.computing.co.uk

Where they are – Points of Presence near you

Name	Aberdeen	Abingdon	Belfast	Birmingham	Bracknell	Bradford	Brighton	Bristol	Cambridge	Canterbury	Cardiff	Coventry	Dewesbury	Edinburgh	Exeter	Falkirk	Glasgow	Gloucester	Hull	Isle of Wight	Leeds	Leicester	Liverpool	London	Luton	Manchester	Milton Keynes	Newbury	Newcastle	Nottingham	Preston	Reading	Saffron Walden	Sheffield	Southampton	Sunderland	Swindon	Warrington	Wolverhampton
Almac				•				•	•				•			•								•		•														
BBC Networking Club				•				•	•															•		•											•			
Byson Computers				•		•		•	•		•		•				•	•	•	•	•	•	•	•		•		•	•	•	•	•	•		•		•	•	•
BTnet																								•		•													
Celtic Internet Services				•				•	•				•											•															
Cityscape Internet Services																								•													•		
CIX				•				•					•			•								•		•													
Compuserve (GNS)																								•									•						
Delphi Internet (GNS)				•		•		•	•		•		•				•	•	•	•	•	•	•	•				•	•	•	•	•	•		•		•	•	
Demon Internet								•																•				•	•	•	•	•	•		•		•	•	
Dungeon Network Systems				•				•	•				•											•															
Easynet	•			•	•			•		•						•								•		•		•											
Electric Mail	•			•	•			•		•						•								•		•		•										•	
EUnet GB																								•		•		•										•	
ExNet Systems	•																							•															
Foremost Training		•														•																							
Genesis Project																								•															
GreenNet (BT PSS/GNS)			•				•	•					•											•		•													
Leaf Distribution																														•									
Lunatech Research																											•												
Mari Computer Systems																										•													
MKBBS																							•																
NetKonect																							•																
On-Line Entertainment																										•													
Paragon Software					•	•		•															•		•														
Pavilion Internet		•				•		•					•										•		•											•			
PC User Group		•				•		•					•										•		•														
Pipex											•												•																
Poptel		•				•		•					•										•		•														
RedNet	•																						•		•			•		•									
Research Machines		•				•		•					•										•		•														
The Direct Connection		•				•		•					•										•		•														
Total Connectivity Providers	•		•	•				•	•							•							•		•		•											
U-Net														•									•		•		•									•			
Zynet																																							

What they offer – Service details and pricing

Name	Service name	Start-up cost	Monthly on-going cost	Yearly on-going cost
Almac	Gold service	none	£7.99	£75
—	PPP Service	none	£7.99	£75
BBC Networking Club	BBC Networking Club	£25	£12	£144
Byson Computers	Standard Dial Up	£12.50	£10	£120
BTnet	BTnetPremium Dial	£499	£437.50 per quarter	£1750
—	BTnetISDN	£499	£750 per quarter	£3000
Celtic Internet Services	Celtic Internet Services	£20	£10	£120
CityScape Internet Services	CityScape IP-Gold	£50	£15	£180
Compulink Information eXchange (CIX)	CIX	£25	£6.25	£75
Compuserve	Compuserve	£26.45	£8	£96
Delphi Internet	Delphi	none	£1.80 per hour	—
Demon Internet	Leased Line Connection 64k	£1000	64k £500-£600	£6000-£7200
—	Network Reserved Dial Up	£750	10	£100
—	Standard Dial Up	£12.50	£10	£100
Dungeon Network Systems	Standard SLIP	none	£10	£100
Easynet	Easynet	£25	£9.90	£118.80
ElectricMail	cc:Mail to Internet Connection	£1495	—	£380
—	IP-Start	£200	£250 per quarter	£3000
—	IP-Dial	£300	£450 per quarter	£5400
—	IP-Dial ISDN	£300	£750 per quarter	£9000
EUnet GB	EmailLink	none	—	£380
—	EmailLink + News	none	—	£580
—	IP-Dial	£300	—	£1800
—	IP-Line	£1000	—	£5000
—	IP-ISDN	£300	—	£3000
ExNet Systems	Basic	none	£7 first month free	—
—	Full Feed Service	none	£25	£300
—	Live IP	none	£20	£240
Foremost Training	Scotnet	none	£25	£300
Genesis Project	Standard Dial Up	£12.50	£10	£120
GreenNet	GreenNet	£30	£15	£180
Leaf Distribution	Servelan	£15	£12.50	£150
Lunatech Research	Luna	£30	£40 per quarter	£120
Mari Computer Systems	IP-Dial	£300	—	£1800
—	IP-ISDN	£300	—	£3000
—	IP-Line 64k	£1000	—	£5000
MKBBS	Email	none	—	£15
NetKonect	NetKonect	none	£10	£120
On-Line Entertainment	On-Line	none	£5	£60
Paragon Software	MessageXchange	£100	£11.50	£138
Pavilion Internet	Pavilion Internet	£17.75	£14.75	£177
PC User Group	WinNet	none	£6.75	£81
—	Connect	£10	£7.25	£87
Pipex	Caller	£250	—	£1200
—	Worldwide	£1000	—	£9400
Poptel	Poptel	£25	£10	£120
RedNet	OnLine	£25	£15	£221
Research Machines	Internet for Learning	£25	£10	£120
The Direct Connection	The Direct Connection	£7.50	£10	£120
Total Connectivity Providers	Freestyle	£7	£10	£114
—	Express	£7	£10	£114
U-NET	U-NET	£12	£12	£100
Zynet	Zynet	£20	£12	£144

Type of connection	Modem	ISDN	Leased line	X.25	Aimed at	Email	FTP	Usenet news	Telnet	Worldwide web	Gopher	Internet relay chat	Details of service
IP	✔	✔	×	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	Business is focused on networking Scotland
IP	✔	×	×	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	Business is focused on networking Scotland
IP	✔	✔	✔	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	BBC-related information, transcripts, TV listings
IP	✔	×	×	×	h/s	✔	✔	✔	✔	✔	✔	✔	The Internet Starter Kit, including Demon connection and Chameleon, costs £149
IP	✔	✔	✔	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	Public Telephone network (via dedicated port – up to 14.4kbps)
IP	✔	✔	✔	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	Optional maintained router enabling connection to Internet
IP	✔	×	×	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	Full business support and consultancy
IP	✔	×	×	×	s/l	✔	✔	✔	✔	✔	✔	✔	Simple to use software and quality support
BBS	✔	✔	×	✔	h/s/l	✔	✔	✔	✔	✔	✔	✔	Europe's premier conferencing system with Internet access
BBS	✔	×	×	×	h/s/l	✔	✔	✔	×	×	×	×	WWW and Telnet are in development
BBS	✔	×	✔	×	h/s/l	✔	✔	✔	✔	×	✔	×	Easy way on to Internet for home users
IP	×	×	✔	×	s/l	✔	✔	✔	✔	✔	✔	✔	Includes BT leased line cost – £500 per month for 0171 area only
IP	✔	×	×	×	s/l	✔	✔	✔	✔	✔	✔	✔	Lan access to the Internet
IP	✔	×	×	×	s/l	✔	✔	✔	✔	✔	✔	✔	Includes unlimited mail addresses
IP	✔	×	×	×	h/s	✔	✔	✔	✔	✔	×	×	Dedicated dial-up is available from £1500 per year
IP	✔	×	✔	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	Owner of the Cyberia cybercafé
IP	✔	×	×	×	s/l	✔	×	×	×	×	×	×	The start-up cost includes the first year's subscription
IP	✔	×	×	×	s/l	✔	✔	✔	✔	✔	✔	✔	Modem service for five users
IP	✔	×	×	×	s/l	✔	✔	✔	✔	✔	✔	✔	Modem service for unlimited users
IP	×	✔	×	×	s/l	✔	✔	✔	✔	✔	✔	✔	One-way ISDN service
UUCP	✔	×	×	×	s/l	✔	×	×	×	×	✔	×	EUnet is part of a 32-country pan-European internet
UUCP	✔	×	×	✔	s/l	✔	×	✔	×	×	×	×	10 UK nodes and over 100 European nodes
IP	✔	×	×	×	s/l	✔	✔	✔	✔	✔	✔	✔	On-site hardware options also available
IP	×	×	✔	×	s/l	✔	✔	✔	✔	✔	✔	✔	Prices inclusive of leased line and on-site router
IP	×	✔	×	×	s/l	✔	✔	✔	✔	✔	✔	✔	One-way ISDN service
BBS	✔	×	×	×	h/s/l	✔	×	✔	×	×	×	×	Fair usage policy applies, each user gets only two hours a day
UUCP	✔	×	×	×	h/s/l	✔	×	✔	×	×	×	×	No usage limit plus domain name
IP	✔	✔	×	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	Two-hour usage limit
IP	✔	×	✔	✔	h/s/l	✔	✔	✔	✔	✔	✔	✔	Glasgow-based Internet provider
IP/PPP	✔	✔	✔	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	Range of Internet connections for in Northern Ireland
IP/bbs	✔	✔	×	✔	h/s	✔	✔	✔	✔	×	✔	✔	Specialises in peace, human rights and environmental issues
IP	✔	✔	✔	×	h/s	✔	✔	✔	✔	✔	✔	✔	Software and modem bundles available – complete package £350
IP	✔	×	×	×	h/s	✔	✔	✔	✔	✔	✔	✔	Service for local homeworkers in the Reading area
IP	✔	×	×	×	s/l	✔	✔	✔	✔	✔	✔	✔	On-site hardware options also available
IP	×	✔	×	×	s/l	✔	✔	✔	✔	✔	✔	✔	One way ISDN
IP	×	×	✔	×	s/l	✔	✔	✔	✔	✔	✔	✔	Prices inclusive of leased line and on-site router. Hardware purchase available
BBS	✔	×	×	×	h/s	✔	✔	✔	×	×	×	×	Basic bulletin board service with email connection – dial 0908 234583
IP	✔	✔	✔	✔	h/s/l	✔	✔	✔	✔	✔	✔	✔	Not part of CIX (Commercial Internet eXchange)
IP/BBS	✔	×	✔	✔	h	✔	✔	✔	✔	×	✔	✔	Multi-user games
IP	✔	✔	✔	✔	h/s/l	✔	×	×	×	×	×	×	Gateways to cc:Mail, MS, Lotus, Notes X400, SMTP – prices vary
IP	✔	×	×	×	h/s	✔	✔	✔	✔	✔	✔	✔	Local calls within Brighton via NYNEX Cablecomms
UUCP	✔	×	×	×	h/s	✔	×	✔	×	×	×	×	WinNet is an offline system – time charged hourly £3.25 per hour
BBS	✔	×	×	×	h/s	✔	✔	✔	✔	✔	✔	✔	PC User Group is the home of the email-based Movie Database Server
IP	✔	×	✔	×	l	✔	✔	✔	✔	✔	✔	✔	Router and modems supplied in Caller Plus
IP	×	×	✔	×	l	✔	✔	✔	✔	✔	✔	✔	Worldwide available 64k
IP	✔	✔	✔	✔	h/s/l	✔	✔	✔	✔	✔	✔	✔	Poptel offers secure email messaging – free off-peak, 5p per minute peak-time
IP	✔	×	✔	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	Especially skilled in Macintosh integration – easy to install start-up disk
IP	✔	✔	✔	×	h/l	✔	✔	✔	✔	✔	✔	✔	Making the Internet available to education – not for business users
BBS/IP	✔	×	×	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	Specialised mail routing plus hosting of www databases
IP	✔	✔	×	×	h/s	✔	✔	✔	✔	✔	✔	✔	Reserved line option – V.34 modem speed, including free personal web page
BBS	✔	✔	×	×	h/s	✔	×	✔	×	×	×	×	Reserved line option available
IP	✔	×	×	×	h/s	✔	✔	✔	✔	✔	✔	✔	Service for Windows only, high-speed modems throughout
IP	✔	✔	✔	×	h/s/l	✔	✔	✔	✔	✔	✔	✔	Full network connection Exeter-based education specialist

diary

Attention event organisers: as part of our commitment to promoting the wider use of the Internet, we at INTERNET are prepared to participate in planning, publicising and participating in anything legal. Contact Roger Green, publisher, at rogerg@computing.emap.co.uk. The INTERNET Diary is Europe's noticeboard for events on and about the Net. Send submissions for inclusion to diary.internet@ computing.emap.co.uk. Include all date, venue, cost and contact information, with a telephone number as well as an email address.

Date	Event	Venue	Organiser	Contact	What's It All About?
2 March	Cyberlove	Cyberia London	Cyberia/ **INTERNET**	Sally Matrick, Cyberia 0171 2090982 sally@easynet.co.uk	How to survive a virtual love affair – women and men on the net (£5).
2 March	Shopping in Cyberspace	Cumberland Hotel London	Unicom	Seamus Flanagan, Unicom 01895 256484 seamus@unicom.demon.co.uk	One-day workshop for would-be electronic shopping mall owners and operators (£395).
3 March	Publishing for Profit on the Internet	Cumberland Hotel London	Unicom	Seamus Flanagan, Unicom 01895 256484 seamus@unicom.demon.co.uk	One-day workshop for potential Internet publishers (£395).
2-3 March	Get Your Hands on the Internet!	Cumberland Hotel London	Unicom	Seamus Flanagan Unicom 01895 256484 seamus@unicom.demon.co.uk	Practical how-to-get-started two-day workshop aimed at computer and marketing managers (£695).
8 March	Women's Art Online	Cyberia Lonson	Cyberia	Sally Matrick, Cyberia 0171 2090982 sally@easynet.co.uk	Celebration of International Women's Day with the opening of Cyberia's online gallery for newcomers to digital art.
9 March	The First International Internet Advertising Festival: Inaugural Meeting	Cyberia London	Cyberia/ **INTERNET**	Sally Matrick, Cyberia 0171 2090982 sally@easynet.co.uk	Invitation-only planning session for proposed event in June. If you're in advertising and would like to be invited, contact Sally.
13 March	Internet in Action: Integrating Your Enterprise	Copthorne Tara Hotel London	Technology Appraisals	Brian Payne, TA 0181 893 3986 techapp@cix.compulink.co.uk	One-day workshop conducted by Mark Gibbs, author of several books on networking and the Internet (£395 – costs less if bought along with same organiser's 14-15 March event).
13-14 March	The Internet Means Business	Park Lane Hotel London	ICM Marketing	Antonia Gillum-Webb, ICM 01483 37107	Strategic two days aimed at financial, business development and IT directors in large organisations.
14-15 March	Working With the Web	Copthorne Tara Hotel London	Technology Appraisals	Brian Payne, TA 0181 893 3986 techapp@cix.compulink.co.uk	Practical two days all about using the World Wide Web for business. Looks at technical, design charging mechanisms etc (£595).
22-24 March	Workgroup Computing 95	Ramada Hotel Heathrow	EMAP Computing	EMAP Computing 0171 388 2430 workgroup@ computing.emap.co.uk	Heavy-duty corporate workgroup applications, exhibition and conference, including **INTERNET** magazine's INTERNET Show feature.
23 March	Parenting in the Cyberage: Are Computers Bad For Your Kids ?	Cyberia London	Cyberia/ **INTERNET**	Sally Matrick, Cyberia 0171 209 0982 sally@easynet.co.uk	How to survive a virtual love affair – women and men on the net (£5).
27-28 March	Doing Business on the Internet	Park Lane Hotel London	Technology Transfer Institute	Technology Transfer Institute 0181 741 1922 100144.1553@compuserve.com	Ex-AT&T computer scientist and consultant Brian Nejmeh looks at a potential business strategies and case studies (£695).
28-29 March	Electronic Messaging	Cumberland Hotel London	Unicom	Seamus Flanagan, Unicom 01895 256484 seamus@unicom.demon.co.uk	Heavy duty corporate electronic messaging event with some Internet content. Aimed at delegates in very large organisations.
30-31 March	Doing Business on the Internet	Grand Hotel Birmingham	Technology Transfer Institute	Technology Transfer Institute 0181 741 1922 100144.1553@compuserve.com	Ex-AT&T computer scientist and consultant Brian Nejmeh looks at a potential business strategies and case studies (£695).
10-13 April	Internet World Spring	Convention Center San Jose	Mecklermedia	Mecklermedia 0101 203 226 6967 iwconf@mecklermedia.com	Spring edition of twice-yearly US conference and expo. Expect it to be bigger than ever.
20 April	Cyberfeminism Discussion: Is Netiquette Sexist?	Cyberia London	Cyberia/ **INTERNET**	Sally Matrick, Cyberia 0171 209 0982 sally@easynet.co.uk	How to forge a female-friendly cyberspace. Includes an examination of sexist language used in Usenet groups (£5).

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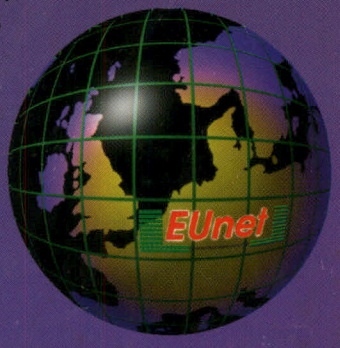

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